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**MONTEREY, CALIFORNIA**

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## MBA PROFESSIONAL REPORT

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**Management and Oversight of Services Acquisition Within the United States Air Force**

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**By:** **Randy T. Solomon**
**John M. Travieso**

**December 2008**

**Advisors:** **Aruna U. Apte**
**Uday M. Apte**
**Rene G. Rendon**

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The purpose of this MBA project is to review policies and practices of the United States Air Force (USAF) in the area of service acquisition and oversight. Additionally, this research will discuss Government Accountability Office (GAO) concerns in the area of service acquisition and oversight. The survey employed herein was taken from a prior NPS MBA project (Meinshausen & Compton) and distributed to 50 Contracting Squadron Commanders across seven separate Air Force Major Commands (MAJCOMs). The researchers conducted the survey between mid-June to mid-July 2008 and received a 68% response rate. Our research shows that contracting officers are serving in the capacity as program managers for a majority of service acquisitions at the installation level. Additionally, this research shows that contracting squadron leadership identifies manning as a major issue for their organization. The results of this project will be used for further research in the area of lifecycle management of service acquisitions.

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# MANAGEMENT AND OVERSIGHT OF SERVICES ACQUISITION WITHIN THE UNITED STATES AIR FORCE

Randy T. Solomon, Captain, United States Air Force
John M. Travieso, Captain, United States Air Force

Submitted in partial fulfillment of the requirements for the degree of

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from the

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**December 2008**

Authors: _____
Randy T. Solomon

_____
John M. Travieso

Approved by: _____
Aruna U. Apte

_____
Uday M. Apte

_____
Rene G. Rendon

_____
Terry Rea, CAPT, USN, Acting Dean
Graduate School of Business and Public Policy

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# MANAGEMENT AND OVERSIGHT OF SERVICES ACQUISITION WITHIN THE UNITED STATES AIR FORCE

## ABSTRACT

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## LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AETC | Air Education and Training Command |
| AF | Air Force |
| AFSOC | Air Force Special Operations Command |
| ACC | Air Combat Command |
| AFB | Air Force Base |
| AFMC | Air Force Material Command |
| AMC | Air Mobility Command |
| AFDW | Air Force District of Washington |
| AFSPC | Air Force Space Command |
| AT&L | Acquisition Technologies and Logistics |
| CPM | Certified Purchasing Manager |
| CPSM | Certified Purchasing Supply Manager |
| CONUS | Continental United States |
| COTR | Contracting Officer Technical Representatives |
| DAWIA | Defense Acquisition Workforce Improvement Act of 1990 |
| DAU | Defense Acquisition University |
| DoD | Department of Defense |
| FAR | Federal Acquisition Regulation |
| FPDS | Federal Procurement Data System |
| GWOT | Global War on Terror |
| GAO | Government Accountability Office |
| GSA | General Services Administration |
| IAT | Installation Acquisition Transformation |
| ISM | Institute for Supply Management |
| OMB | Office of Management and Budget |
| MBA | Master's of Business Administration |
| MAJCOM | Major Command |
| QA | Quality Assurance |
| QAE | Quality Assurance Evaluator |

| | |
|---|---|
| QASP | Quality Assurance Surveillance Plan |
| QAP | Quality Assurance Personnel |
| PSC | Product Service Code |
| SOO | Statement of Objectives |
| USA | United States Army |
| USN | United States Navy |
| USAF | United States Air Force |
| USD | Under Secretary of Defense |
| SOW | Statement of Work |

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# I. INTRODUCTION

## A. BACKGROUND

Over the past twelve years, the Department of Defense (DoD) has experienced an increase in the use of service contracts. Demand for contractors is evident as DoD obligations for services increased 78% between 1996 through 2006—from $85.1 billion to $151 billion, respectively (GAO, 2007c). Several factors have contributed to the growth in contractor-supported service contracts and the cost associated with those services. Some primary examples are the Global War on Terror (GWOT) and acquisition reform initiatives that encourage outsourcing certain mission-critical services to the private sector. As a result, military personnel that once performed these contracting activities are now better utilized as warfighters.

Another key factor is the absence of solid business practices and oversight policies associated with services acquisition reform and downsizing the DoD civilian workforce—decreased by 38% between 1989 and 2002 (GAO, 2006). The Government Accountability Office (GAO) stated that the "DoD is challenged in its ability to maintain a workforce with the requisite knowledge of market conditions, industry trends, and the technical details about the services they procure; the ability to prepare clear statements of work; and the capacity to manage and oversee contractors" (GAO, 2007c).

Overall, as increased costs mirror the demand and complexity of service contracts, DoD senior leadership—specifically the Acquisition corps—is concerned about how organizational structure and processes influence proper contract management and oversight to mitigate risk associated with federal acquisitions. In order to meet agency requirements and budget constraints, "several key factors are necessary to improve DoD's service acquisition outcomes—that is, obtaining the right service, at the right price, in the right manner" (GAO, 2006). These key factors and other related issues regarding the procurement of services will be addressed in Chapter II.

## B. PURPOSE

The purpose of this research is to collect data in the area of Air Force service acquisition management at the installation level. The data will be collected through a survey given to 50 Air Force (AF) Squadron Contracting Commanders. Responses to these surveys will give us a current look into current policies and practices for the acquisition of installation services. The results will be used for further research (Apte & Rendon, 2007) in the area of managing the service supply chain in the DoD.

This project will also address how the procurement of commodities differs from the procurement of services. "Intangibility of service outcomes makes it difficult to clearly describe and quantify services, and, therefore, to contract for services" (Apte, Ferrer, Lewis, & Rendon, 2006). Throughout the acquisition process, stakeholders experience major problems when asked to define requirements, to control or measure quality and to calculate costs associated with service procurements. In turn, federal agencies are unable to determine if the government receives the best value for or the desired outcome on service contracts. For example, when the Government purchases trucks for transportation, each truck is a delivered item that can be inspected and accepted based on tangible specifications. Additionally, acquisition personnel are able to pinpoint the quality of a product with uncomplicated and measurable standards (mileage, maintenance cost, and depreciation value of vehicle). In contrast, for services, the ability to measure the quality of professional, administrative and management support is increasingly difficult. How do acquisition personnel quantify the value of a medical exam or other services listed in Table 1? What are the performance measurements for these services? These are challenging issues that have plagued DoD services acquisitions for several decades, but which are more prevalent now that the DoD is outsourcing more services than ever before.

## C. RESEARCH QUESTIONS

This MBA project will focus on answering tough questions in the area of services acquisition. The data retrieved from this research will be used to support on-going research in the area of services acquisition—specifically Apte, Apte and Rendon's "Managing the Service Supply Chain in the Department of Defense: An Empirical Study of Current Management Practices." The following are five specific questions for Air Force service acquisitions that will be answered with this MBA project:

1) What types of services are typically contracted for at AF installations, and what is the annual expenditure for these services?
2) What types of acquisition strategies, procurement methods, and contracts are being used to acquire services?
3) How are these service contracts managed?
4) What types of organization/management structures are used to manage contracted services?
5) What training does contract and project/program management staff receive? (Apte, Ferrer, Lewis, and Rendon, 2006)

## D. SERVICE CATEGORIES

This research focuses on the acquisition of services at AF installations and provides empirical data with which to conduct a comprehensive study and analysis of current procurement methods and procedures related to the four service categories listed in Table 1. These four primary areas comprise of 63% of the services purchased within the DoD. Out of the $95.90 billion spent on services in fiscal year 2005, these four Product Service Code (PSC) categories required $60.00 billion—representing a growing trend among federal agencies.

Table 1. Service Categories of Interest

| Service Category |
| --- |
| Professional, administrative, and management support |
| Maintenance and repair of equipment |
| Data processing and telecommunications |
| Transportation and travel |

The Federal Procurement Data System (FPDS) Manual describes 24 service categories and subcategories (identifies specific service within each category) available to federal agencies. The PSCs are defined by the General Services Administration (GSA) and managed through the FPDS. Appendix B provides a complete list of service categories and the assigned PSCs.

## E. RESEARCH METHODOLOGY

The main objective of this research was to use a survey instrument to collect empirical data at AF installation-level contracting activities. A standardized 86-question survey, entitled "DoD Military Installation Services Acquisition Survey: Air Force Installations," was deployed to approximately 50 AF Contracting squadrons. The web-based questionnaire was powered by SurveyMonkey and used filter questions, along with skip-logic, to maneuver between the service categories and related questions regarding procurement methods and procedures. The survey also utilizes 12 Likert scale questions each with a six-item response ranging from strongly disagrees to strongly agree or not applicable.

In support of on-going research in acquisition and lifecycle management for services, the methodology (triangulation) used in this research project concentrated on various, independent methods with the purpose of gathering data to answer the same research findings.

> Triangulation is an approach to data analysis that synthesizes data from multiple sources. Triangulation seeks to quickly examine existing data to strengthen interpretations and improve policy and programs based on the available evidence. By examining information collected by different methods, by different groups and in different populations, findings can be corroborated across data sets, reducing the impact of potential biases that

> can exist in a single study. Triangulation combines information from quantitative and qualitative studies…and makes use of expert judgment (http://www.igh.org/triangulation/).

The research described in this report is based on three different sources of information: 1) government and nongovernmental documents, reports and studies, 2) a web-based survey, and 3) quantitative data from the Federal Procurement Data System (FPDS). These sources identify policies and practices, methods and procedures, and expenditures in the procurement and oversight of specific service categories, respectively (Table 1 above).

First, research focused on an extensive review of available literature related to the management and oversight of service-oriented government contracts. The primary purpose of reviewing these documents was not to collect data; instead, the readings were used to understand the complexities regarding defense service acquisitions, to provide an overview of procurement processes, and to confirm well-documented historical problems. A list of documents reviewed in support of this research is seen in Appendix A (not all inclusive).

Second, the researchers collected data through a web-based questionnaire that addressed core questions related to the acquisitions in specific service categories. Input from approximately 50 USAF installation-level contracting activities was requested from senior contracting professionals to provide information regarding acquisition management methods of service-type contracts. Chapter III provides additional details about the survey instrument.

Finally, the researchers conducted an analysis of federal spending from the Federal Procurement Data System (FPDS) database in order to gather quantitative data about AF service procurements. The FPDS is a robust reporting tool that provides an aggregate of federal government contract actions and related information—including, but not limited to, the following: contracting activity, obligated award amount, product or service category, type of contract, competitive status, and business size. This segment of research will focus on the service categories listed in Appendix B and provide an aggregate of dollars spent from FY03 to FY07.

## F. ORGANIZATION OF REPORT

Chapter I provides the introductory information for the research, and includes the background narrative, purpose of the study, research questions, research methodology and the chapters' organization. Chapter II is a literature review. It provides a broad overview of federal spending and historical contracting policies and practices associated with service acquisitions. This chapter also provides a summary of past and current challenges regarding contract management and oversight of services throughout the acquisition process. Chapter III focuses on the survey instrument and participant selection. This chapter details the questionnaire's structure as a tool to collect empirical data and provides insight into the mission of AF installation-level contracting activities. Chapter IV centers on the analysis of the collected data—in particular, the findings and results of the web-based survey. Chapter V consists of a summary of our project, conclusions, and recommendations for both survey improvement and further research.

## G. SUMMARY

This chapter provides the reader an introductory framework for this research. The research background, purpose and research questions guide the discussion into a comprehensive review of management and oversight of services acquisition within the AF. While the organization of the paper clarifies this research, the success of the study depends on the survey instrument dissemination and the participants' responses to our research questions regarding current procurement methods and contract management practices. The next chapter will provide a literature review on service acquisitions.

# II. REVIEW OF LITERATURE

## A. INTRODUCTION

This chapter focuses on a review of available literature from several types of documents related to service contracting. The purpose of such a review was not to collect data; instead, the researchers used the readings to understand defense acquisition complexities, generate an overview of procurement processes, and to confirm well-documented historical problems. The first area this chapter examines is the management of service contracts and the importance of this discussion to the Department of Defense. The chapter then looks at performance-based contracting and the DoD's goals to employ it. Finally, this chapter discusses the policies, procedures, and training related to proper contractor oversight.

## B. SERVICE CONTRACTS

### 1. Management of Service Contracts

Personnel not familiar with government contracting might pose the question, "Why is service contracting such an important factor in today's Federal Government?" In recent years, there has been an unprecedented growth and dependence on the use of contractor-provided services within the DoD. A trend among Federal organizations is acquiring professional, administrative, and management support contracts to replace or supplement the Federal workforce. As stated earlier, from 1989 through 2002, the DoD civilian labor force was cut by 38%. After these Federal employees were gone, leaders turned to contractors to fill in the missing positions. These contractors needed to be hired through government service contracts, thus leading to an increased workload for the acquisition workforce. In turn, numerous issues emerged from the lack of trained acquisition personnel to properly award and oversee service contracts (GAO, 2006, November). A summary of these issues are listed below:

- The DoD has a reactive approach to service acquisitions.
- Strategic-level management does not leverage its buying power and utilize the benefits of strategic sourcing.
- At the transactional level, customer requirements are not well defined.
- There is not enough personnel to perform proper contractor oversight.
- Transactional-level actions focus on contract award and not on ensuring customers' requirements are well defined and met after contract award.
- Adequate competition requirements for service contracts are not being met.
- There has been some improper use of other agency contract resources.
- There is a lack of trained and qualified contracting personnel within the DoD. (GAO, 2006, 2007a, 2007c)

First on the list above, the GAO claims that the current service acquisition practices within the DoD suggest a reactive strategy from senior defense leadership. Rather than develop a strategic plan to purchase services and leverage the influential buying power of the Federal Government, the acquisition workforce responds to service requirements as the need arises (GAO, 2006). Commercial industry practices—in particular, strategic sourcing—were developed over the 1990s. Within the commercial marketplace, large businesses transformed the "buying" mentality to more of a "strategic sourcing" mentality. It brought purchasing from a tactical level to a more strategic level. This meant that the purchase of items companies bought repeatedly became more systematic, and the mentality of "process behind the purchase" became routine (Cavinato, Flynn, & Kauffman, 2006). In other words, tactical purchasing became strategic supply management. This change in corporate purchasing led the way for such organizations as the Institute for Supply Management (ISM) to develop certifications for corporate purchasing professionals. The titles of Certified Purchasing Manager (C.P.M.) and Certified Purchasing Supply Manager (C.P.S.M.) designate professionals in the supply management workforce who are being properly trained and qualified in the area of strategic purchasing.

The transactional level of service acquisition is another point of interest that results in numerous criticisms from critics. Transactions dealing with service-level contracting focus on getting the contract awarded and not always on what the final result will be for the end-user. Proper requirements definition, preferably using performance-based contracting methods, are necessary to if contracting officers are to bring about the expected end results to meet customer needs (GAO, 2006).

In response to the increase in service acquisitions, policies and practices are being put into place that ensure the United States Air Force (USAF) procures the right services, at the right time, and in the right way (GAO, 2006). The Under Secretary of Defense (USD) for Acquisition Technologies and Logistics (AT&L) issued a memorandum that implements a DoD improvement plan for high-risk contract-management items. The plan includes implementing commercial best practices for taking a strategic-level approach in the procurement of services. Additionally, the plan urges improved training for Contracting Officer Technical Representatives (COTRs) and the use of Wide Area Workflow for electronic submittal for payments to contractors. (USD AT&L, 2006).

### 2. Performance-based Services Acquisition

Performance-based services acquisitions are based on the concepts of using best industry practices to meet government requirements. Performance-based contracting stems from the idea that industry processes can help the government meet requirements in more efficient ways. In the past, the government awarded contracts using detailed Statements of Work (SOWs) and specifications. This type of contracting left small margin for innovative ideas and concepts that would help control costs; it thereby led to higher-priced contracts. The GAO suggests that with the implementation of performance-based contracting, the government can use the innovative technologies from industry, entice more competition from world-class suppliers that would not normally conduct business with the government, and implement best-value concepts to achieve higher-quality services and lower costs (GAO, 2002). Performance-based contracting is the preferred method of purchasing services within the Federal Government (GSA, DoD & NASA, 2008).

The USAF has specific policy concerning performance-based contracting for services; performance-based strategies are spelled out clearly in Air Force Instruction (AFI) 63-124. This AFI details specifics concerning acquisition planning, market research, the performance work statement, and the performance plan used for monitoring the contractor. Additionally, this AFI describes the responsibilities of senior leadership, Contracting Squadron Commanders, Functional Commanders/Directors, Quality Assurance Personnel (QAP), and the multi-functional teams (USAF, 2005). This policy has established clear guidelines and responsibilities for the USAF in the area of performance-based contracting.

Senior leaders within the Federal Government initially saw the potential benefits of performance based contracting back in 2001. The Office of Management and Budget (OMB) established a goal in 2001 that required Federal Agencies to use performance-based Contracting for 20% of all services contracted within the Federal Government. This goal was met in 2001 due to Federal agencies reporting that $28.6 billion, or 21% of the total $135.8 billion, in service contracts were awarded using performance-based procedures (GAO, 2002). Of the 360,000 service contract actions during 2001, 41,000 of those contract actions were performance-based acquisitions (about 11%) (GAO, 2002).

A year prior, the DoD was on the forefront to implement performance-based acquisition approach. It established a more aggressive goal:

> It is the policy of the Department of Defense that, in order to maximize performance, innovation and competition, often at a savings, performance-based strategies for the acquisition of services are to be used wherever possible. While not all acquisitions for services can be conducted in a performance-based manner, the vast majority can. Those cases in which performance-based strategies are not employed should become the exception. In order to ensure that the Department continually realizes these savings and performance gains, the DoD establishes, at a minimum, that 50 percent of service acquisitions, measured in both dollars and actions, are to be performance-based by year 2005. (DoD, 2001)

After establishing these goals in FY 2000/2001, the General Accounting Office (GAO), a predecessor office to the Government Accountability Office, did a study in FY02 to investigate if United States Government agencies were using performance-based

contracting procedures effectively. The research included a review of 25 contracts, 10 of which were from the DoD, to grasp how well these agencies were incorporating performance-based contracting procedures. The GAO compared these contracts to four performance-based attributes and rated them on how well they exhibited these characteristics. Listed are the four performance-based goals within that 2002 GAO report:

1) Describe the requirements in terms of results required rather than the methods of performance of the work.

2) Set measurable performance standards.

3) Describe how the contractor's performance will be evaluated in a quality assurance plan.

4) Identify positive and negative incentives, when appropriate. (GAO, 2002)

The report concluded that out of the 25 contracts reviewed, nine contracts exhibited all four performance-based attributes. Of these nine initial contracts, three contracts were from the DoD. These nine contracts were awarded for services that were commonly performed in industry. The types of services included advertising for Navy recruitment, custodial services on Air Force bases, and on-line educational services for Army personnel. The report points out that these initial services did not present a large risk to the government if the desired performance was not met. These were perfect services to introduce these performance-based contracting concepts (GAO, 2002).

One the other hand, four of the 25 contracts did not show all four performance-based attributes. These four contracts were highlighted in the report due to the fact that they were low-risk contracts and perfect candidates for a transformation to performance-based contracting procedures. These four comments included two USAF contracts dealing with refuse collection and housing maintenance (GAO, 2002). The GAO report included examples of the extensive descriptive wording within the contracts:

> The $3 million Treasury dormitory management contract contained 47 pages of specifications that, among other things, detailed: the cotton/polyester fiber content of towels, bed linens, and ironing board pads; the components necessary for making up a bed; monogramming

> contractor employee uniforms; minimum thickness standards for trash can liners; and when and how to perform maintenance on water coolers and air conditioning equipment. (GAO, 2002)

Finally, 12 of the 25 contracts reviewed within the GAO report were perceived to have very complex and technical requirements, were high risk to the government if requirements were not met, or these services were unique to government organizations. This report relayed the message that not all contracts need to be subject to performance-based contracting procedures. Tactical test ranges, recovery of space shuttles, and the operation of a nuclear facility were some of the service contracts that fell into this category. The logical consensus that was generated from this report is that sometimes extensive requirements on "how to" perform certain functions are crucial when the requirements are complex in nature. Additionally, extensive government oversight is sometimes needed to ensure proper performance on high risk service contracts. (GAO, 2002).

Performance-based contracts are a viable way for acquisition personnel to save money and receive better contractor performance across the Federal Government. Performance-based strategies for procuring services are preferred methods and, in some cases, are mandated in future contracting requirements. Although the GAO report shows that Federal agencies are succeeding in low-risk commercial services, they can make improvements by finding ways to incorporate performance-based contracting procedures.

### 3. Services Purchased Within the DoD

Public law requires that the Office of Management and Budget (OMB) establish a system to assemble, develop, and distribute funding information across various levels of the Federal Government. The DoD identifies and tracks services acquisition codes through the Federal Procurement Data System Product and Service Codes Manual. This system allows for the various levels of the Federal Government to track and account for all the funding going to the various services. The services acquired within the DoD

transcend numerous specialties. As seen below in Table 2, the DoD procures services ranging from data processing and telecommunications services to medical services to housekeeping services.

Table 2. Services Purchased within DoD FY2005 (From: GAO, 2007b)

| **Service Category** | **Contract Costs (FY2005)** |
|---|---|
| Professional, administrative, and management support | $30.10 Billion |
| Maintenance and repair of equipment | 12.3 |
| Data processing and telecommunications | 11 |
| Medical | 8.4 |
| Maintenance and repair of real property | 8 |
| Utilities and housekeeping | 7 |
| Transportation and travel | 6.6 |
| Conservation and natural resources | 2.3 |
| Operation of government-owned facilities | 2.1 |
| Technical representative services | 1.7 |
| Special studies and analyses | 1.5 |
| Modification of equipment | 1.4 |
| Educational and training services | 1.4 |
| Other | 2 |
| **Total** | **$95.90 Billion** |
| * Includes a sum of all contracts that exceed $25,000 | |
| **Fiscal year 2007 dollars in billions | |

## C. OVERSIGHT OF SERVICES CONTRACTS

This MBA Project focuses on the acquisition management of services within the USAF. There are six phases of the contract management process. The phases are: procurement planning, solicitation planning, solicitation, source selection, contract administration, and contract close-out. The procurement planning phase focuses on purchase issues: if the requirements should be purchased, what needs to be purchased, and how the requirements should be purchased. The solicitation planning phase focuses on creating the documents for the procurement. The solicitation phase consists of

receiving the potential contractors' proposals on how they intend to meet the government's requirements. In the source-selection phase, the government evaluates each proposal (based on pre-established evaluation criteria) and selects a contractor that will best meet the government's requirements. Then, in the contract administration phase, the government ensures that the contractor is meeting the contractual requirements. Finally, contract close-out is the phase in which all final administrative issues are resolved, and the contract is thereby physically complete (Garrett & Rendon 2005).

Contract oversight takes place in the contract administration phase after a contract has been awarded. After the contracting officer awards a contract, contract administration becomes the focal point of the acquisition process. Surveillance is a critical piece of contract administration; it ensures that the contractor is meeting the contractual obligations. The Federal Government is required to ensure that supplies or services received meet the terms and conditions of the contract. This surveillance requirement is called Quality Assurance (QA)—which consists of proper planning, training, and inspections and the communication of inspection results.

### 1. Contract Administration Policy

The overarching acquisition policy in the United States Federal Government is the *Federal Acquisition Regulation* (*FAR*). The *FAR* establishes all policies concerning the Federal Government with regards to the purchase of goods or services. There are numerous entities that make up the contract administration team. First, the contracting officer is the person who has the authority to obligate the government in a contractual relationship. Second, the requiring agency (or "the customer") is the technical expert that not only generates the requirements that are needed but also acts as the Quality Assurance Evaluator (QAE) to ensure the contractor is meeting its contractual obligations. The *FAR* lists responsibilities for the contracting officer and the customer, included below:

> Contracting officers shall…
>
> (a) Coordinate with the technical experts to establish specifications for inspections (quality assurance surveillance plan) and establish the required quality standards for the goods or services.
>
> (b) Ensure these established quality standards make it into the contractual documentation. It is critical to identify these standards thereby allowing the contractor to know what standards they are required to meet. Additionally, if they do not meet those standards the government has the contractual documentation to enforce these quality standards.
>
> (c) Ensure that when contractual standards are not met, it is identified and the severity of the nonconforming actions. (GSA, DoD & NASA, 2008)

The contracting officer is the individual who is ultimately responsible for ensuring the contractor is meeting the government's specified requirements or performance standards (2008). The contracting officer obtains support from technical experts—titled Quality Assurance Personnel (QAP). These individuals are required to support the contracting officer by being their "eyes and ears." The contracting officer is not trained in all aspects of services; therefore, customer support is critical. For example, during an airfield maintenance contract, the contracting officer who is trained in government acquisitions could not adequately manage and oversee the contractor's performance. The contracting officer is not qualified; therefore, a qualified QAP is assigned to support the contracting officer and ensure the contractor is meeting contractual obligations. Additionally, the contracting officer does not own the requirements for the contract, the customer does.

Assessment of the contractor performance is executed in accordance with the Quality Assurance Surveillance Plan (QASP). The QASP should be comprehensive enough to ensure the contractor is adhering to the terms and conditions of the contract. The plan should include the specific work that requires surveillance and the methods of surveillance that will be used by the QAP (2008).

Proper documentation is required when either the QAP or the contracting officer is performing surveillance on the contractor. The QAP will inspect the contractor in

accordance with the QASP and assemble reports for the contracting officer. These reports will inform the Contracting Officer of any nonconforming issues that require additional contractual decisions. Ultimately, the customer is a key member of a multi-functional team. As the primary stakeholder, the customer is the owner of the requirement and has the technical expertise to oversee the contract and to provide the PCO with any non conforming issues though the use of inspection reports.

### 2. Quality Assurance Personnel Training

Quality Assurance Personnel are selected to perform oversight duties based on their specific technical skills in related areas. However, this does not immediately qualify them to start performing inspections on the services contractors provide. As one 2005 GAO report states, training is the first step:

> Surveillance is not a one-step process. It begins with properly training personnel for assignment of surveillance responsibilities and involves ongoing surveillance actions throughout the performance period of the contract to ensure the government receives the services it contracted for in a timely manner. Surveillance includes creating an official record documenting that the contractor's performance was acceptable or unacceptable. (GAO, 2005)

Since training is a critical part of contractor surveillance, the QAP must understand the contractual aspects of evaluating performance before inspections begin. For example, the assigned personnel must understand the terms and conditions of the contract and review the services performed to ensure they are in accordance with the contractual documentation known as a performance plan. The assigned QAP may not use historical references ("how we did it in the past") to evaluate the contractor's performance or use their own personal preferences ("that's how I would do it") to conduct oversight. QAP must use performance metrics established within the contract and compare the contractor's performance to the appropriate standard. It is the contracting officer's responsibility to ensure oversight is conducted properly and the government receives a best-value effort from the contractor (DoD, 2001). Most importantly, QAP have very limited authority and may not authorize any obligation to the government. For example, an unauthorized commitment occurs when an individual other

than the contracting officer directs the contractor to perform or provide items not on the contract. This type of circumstance could contribute to serious mission impact. In accordance with Federal law, these issues must be resolved through a process called ratification. Unauthorized commitments and ratifications lead to additional costs to the government. These actions are adverse to the contracting process; therefore, the contracting officer must train QAP on unauthorized commitments during Phase II training to mitigate risk (GSA, DoD & NASA, 2008).

Quality Assurance Personnel have to go through a formal process before they are allowed to inspect contractors' performance on behalf of the government. The Functional Commander or Functional Director is a key part of qualifying QAP. The Functional Commander is usually a senior leader within the requiring agency that is in charge of assigning QAP. Additionally, the Functional Commander reviews reports generated by the QAP to ensure the contractor is meeting the contractual obligations in accordance with the operational mission. The first step in assigning QAP consists of the Functional Commander reviewing potential QAP area of expertise. The QAP are then assigned or denied based on the amount of experience they possess. The Functional Commanders then assign the QAP based on their technical experience (DoD, 2001). Each person then receives Phase I training, which is the initial training for QAP (GSA, DoD & NASA, 2008). This training provides a summary of various acquisition backgrounds for a technical expert that has no experience in the contracting arena. Phase I training is given online through the Defense Acquisition University (DAU). Below is the course description given by DAU:

CLC 106: Contracting Officer Representative with a Mission Focus:

> This learning module provides the learner with the basic skill set needed to be a Contracting Officer's Representative (COR). It an overview of the acquisition process, teaming, ethics and integrity, authorities, contract classification, contract types, proper file documentation, performance assessment methods, remedies for poor performance, invoice requirements, contract modifications, and contract management. The construct of this module provides a flexible training set that can be tailored to your agency's COR training certification program, adheres to the Office

> of Federal Procurement Policy (OFPP) Best Practice Guideline for CORs, and takes advantage of the learner's training at the point of need. (DAU, 2008)

Once Phase I training is completed, the QAP must complete Phase II training. This second phase of training is conducted by the contracting officer and addresses specific conditions within the contract—specifically the QAP contract management and oversight responsibilities. The contracting officer is responsible for training and ensures that QAP understand aspects of multi-functional teams, the contract specifics (i.e., contract type and PWS), and any incentives responsibilities that may befall him/her (i.e., award-fee monitor). Table 3 below is a suggested syllabus for the contracting officer conducting Phase II training for a new QAP (GSA, DoD & NASA, 2008).

Table 3. Suggested Syllabus for Phase II Training (From: DOD, 2001)

| **Phase II Training—**Suggested Syllabus for Phase II Training |
|---|
| **a. Multi-functional Team:** |
| (1) Members.<br>(2) Roles and responsibilities.<br>(3) Training requirements. |
| **b. Contract Review:** |
| (1) Contract type.<br>(2) Identify whether PBSA or non-PBSA.<br>(3) Review of Award Fee Plan, if applicable.<br>(4) Sections of the contract.<br>(5) Transition & how quality assurance (QA) will be managed during transition.<br>(6) Schedule B or commercial equivalent.<br>(7) Contract clauses, e.g., Inspection of Services.<br>(8) Rights and remedies of Government.<br>(9) Special contract provisions (Section H or commercial equivalent).<br>(10) Potential areas of fraud, waste, and abuse.<br>(11) Payment Provisions:<br>(a) Do you have a password/login for Wide Area Work Flow (WAWF)?<br>(b) Have you been trained? If not, provide training.<br>(c) Explanation of types of invoices.<br>(d) Importance of timely acceptance/submissions. |
| **c. Award Fee Plan/Performance Plan:** |
| (1) Contractor Management:<br>(a) Importance of documenting results of oversight.<br>(b) Performance objectives.<br>(c) Performance thresholds.<br>(d) Methods/tools/documentation for surveillance and assessment of contractor performance prescribed by Performance Plan.<br>(e) Use and verification of contractor's quality control plan.<br>(f) Method of notifying Contracting Officer of significant performance deficiencies.<br>(g) Method of recommending improvements to performance work statement (PWS) or Performance Plan. |
| (2) Contract Management:<br>(a) Reviews required prior to execution of any options.<br>(b) Periodic reviews to determine if contract as written meets changing mission objectives/goals.<br>(c) Past performance documentation requirements [Contractor Performance Assessment Reporting System (CPARS)] or local procedures<br>(d) Management and Oversight of Acquisition of Services Process (MOASP) overview (required reviews and data collection).<br>(e) Process for capturing lessons learned/best practices.<br>(f) Cost, schedule, and performance constraints.<br>(g) Process contractor is using to mitigate risk and government process to understand contractor's management process of risk.<br>(h) Scheduled reviews of the performance plan/award fee plan.<br>(i) Process to evaluate contractor correction plans.<br>(j) Process for conducting day-to-day business, e.g. minute meetings, modifications, etc.<br>(k) Scheduled meetings.<br>(l) Scheduled contract management reviews w/multi-functional team. |

## 3. Current Issues

From the transition from government employees performing services to the Federal Government contracting these services to contractors calls for increased surveillance of contracted services. Even though there are established policies on how the Federal Government is to provide oversight of contracted services, these policies are not always followed.

In 2005, a GAO report gave insight on how the DoD is fairing when it comes to the oversight of its service contracts. The study reviewed 90 services contracts across the USAF, United States Navy (USN), United States Army (USA), and Office of the Secretary of Defense (OSD). The 90 contracts reviewed were all over the $100,000 threshold and had at least one-year of surveillance on record. The GAO reviewed three main aspects in the area of contractor surveillance: (1) What were the actions taken by the agency do to perform surveillance? (2) If the surveillance was not sufficient, what was the reasoning behind it? (3) What steps do we take to ensure surveillance improves? (GAO, 2005).

The GAO report showed that surveillance varied between the 90 contracts reviewed. Of the 90 total contracts, 26 contracts showed insufficient surveillance, and 64 contracts showed sufficient surveillance. Of the 26 contracts that were deemed inadequate, 15 contracts showed no surveillance even existed (no personnel or proof of surveillance). The remaining 11 contracts had surveillance personnel assigned but had no documentation that surveillance was conducted. Table 4 below shows the summary of the 2005 GAO report and where the problems were located throughout the DoD (GAO, 2005).

Table 4. Summary of Surveillance on DoD Service Contracts (From: GAO, 2005)

| | Total Contracts Reviewed | | | |
|---|---|---|---|---|
| **DoD Organization** | **Number of contracts** | **Award amount (in millions)** | **Number of contracts with no surveillance personnel assigned** | **Number of contracts with insufficient evidence of surveillance** |
| **Air Force** | | | | |
| AFMC | 20 | $39.00 | 0 | 0 |
| Other organizations | 8 | 2.4 | 0 | 0 |
| **Army** | | | | |
| ACA-North | 19 | 86.2 | 7 | 2 |
| Other organizations | 11 | 20.7 | 6 | 1 |
| **Navy** | | | | |
| NAVSEA | 20 | 226.6 | 0 | 0 |
| Other organizations | 6 | 8.7 | 1 | 4 |
| **OSD & other DoD agencies** | 6 | 2.1 | 1 | 4 |
| | | | | |
| **Total** | 90 | $385.70 | 15 | 11 |
| * Dollars in millions | | | | |

Another problem revealed by the research was the lack of proper training for QAP. A large number of surveillance personnel would start to inspect contractor's performance without adequate training (GAO, 2005). This single issue could lead to major litigation issues for the Federal Government in the area of unauthorized commitments; unauthorized commitments could be made if these non-trained surveillance personnel are released to performed inspections before they are properly trained. Below, Table 5 displays the GAO findings associated with assigned surveillance personnel not properly trained.

Table 5. Surveillance Personnel Training (From: GAO, 2005)

| Military command | Surveillance personnel assigned to contracts | Surveillance personnel not trained before assignment |
|---|---|---|
| AFMC | 60 | 10 |
| ACA-North | 13 | 1 |
| NAVSEA | 31 | 2 |
| **Total** | **104** | **13** |

One of the findings within the GAO report shows that surveillance is not at the top of the contracting officer's priority list. Contracting officers do not see surveillance as important as awarding contracts. Contracting officers expressed that "taking care of the customer" is their number-one priority. Awarding contracts takes precedence over training QAP and ensuring proper contractor surveillance (GAO, 2005).

Our research focuses on what training is currently being provided to QAP at Air Force installations. Our research will also ask respondents how long QAP are assigned to their surveillance positions. Finally, our survey will ask senior contracting officials about the manning situation within their organizations. Data from the survey will provide insight into the issues and concerns associated with contracting activities and how leadership decisions influence the services acquisition process.

## D. SUMMARY

This chapter provided a review of available literature from several types of documents related to service contracts, performance-based contracting, and the management and oversight of Federal Government contracts. There has been an unprecedented growth and dependence on the use of contractor-provided services in recent years. Additionally, performance-based contracting has changed the way the DoD does business. Such new processes are evidence that the Federal Government is trying to tap the innovation and benefit of the commercial marketplace, thereby bringing about increased competition and lower prices. Finally, this chapter has discussed the issues associated with service contractor oversight. Policies and training must be adhered to and administered properly if service contractors are to successfully meet Government requirements. The next chapter will discuss the survey instrument used to gather our empirical data on such service contract management.

# III. SURVEY INSTRUMENT

## A. INTRODUCTION

The purpose of this chapter is to explain the survey instrument and the participant selection—AF operational contracting squadrons. This chapter further describes the questionnaire's structure as a tool to collect empirical data and provides insight into the mission of operational contracting units.

The primary objective of our research was to deploy a survey instrument and to collect empirical data. A standardized 86-question survey, entitled *DoD Military Installation Services Acquisition Survey: Air Force Installations*, was deployed to approximately 50 continental United States (CONUS) AF Contracting squadrons—as listed in Table 6. For informational purposes, a geographical map with the location of each CONUS AF base (with a buying office) is provided in Appendix C. The web-based questionnaire used filter questions and skip-logic to maneuver between service categories and related questions to identify organizational policies and practices, and procurement methods and procedures. This section will provide a pilot test overview, discuss participant selection and the AF operational contracting structure. It will then explain the survey questions.

Table 6. CONUS AF Installations per MAJCOM

| MAJCOM | AIR FORCE BASE | STATE | MAJCOM | AIR FORCE BASE | STATE |
|---|---|---|---|---|---|
| ACC | BARKSDALE | LA | AETC | ALTUS | OK |
| | BEALE | CA | | COLUMBUS | MS |
| | DAVIS-MONTHAN | AZ | | GOODFELLOW | TX |
| | DYESS | TX | | KEESLER | MS |
| | ELLSWORTH | SD | | LACKLAND | TX |
| | HOLLOMAN | NM | | LAUGHLIN | TX |
| | LANGLEY | VA | | LITTLE ROCK | AK |
| | MINOT | ND | | LUKE | AZ |
| | MOODY | GA | | MAXWELL | AL |
| | NELLIS | NV | | RANDOLPH | TX |
| | OFFUTT | NE | AFDW | ANDREWS | MD |
| | SEYMOUR JOHNSON | NC | | BOLLING | DC |
| | SHAW | SC | AFMC | EDWARDS | CA |
| | WHITEMAN | MO | | HANSCOM | MA |
| AMC | CHARLESTON | SC | | HILL | UT |
| | DOVER | DE | | KIRTLAND | NM |
| | FAIRCHILD | WA | | ROBINS | GA |
| | GRAND FORKS | ND | | TINKER | OK |
| | MCCHORD | WA | AFSPC | BUCKLEY | CO |
| | MCCONNELL | KS | | F E WARREN | WY |
| | MCGUIRE | NJ | | LOS ANGELES | CA |
| | POPE | NC | | MALMSTROM | MT |
| | TRAVIS | CA | | PETERSON | CO |
| AFSOC | HULBURT | FL | | SCHRIEVER | CO |
| | MACDILL | FL | | VANDENBERG | CA |

Note: ACC = Air Combat Command, AETC = Air Education and Training Command, AFDW = Air Force District of Washington, AFMC = Air Force Material Command, AFSPC = Air Force Space Command, AMC = Air Mobility Command, AFSOC = Air Force Special Operations Command

## B. PILOT TEST OVERVIEW

The purpose of the pilot-phase question and design testing were to: (1) measure the questionnaire's reliability and validity, (2) properly capture data from participants by military department, major command, region, installation, and each focus area—as applicable, (3) ensure the survey instructions and questions were understood by each respondent, and (4) diagnose any major web-based formatting problems.

Our research is a follow-on effort to Compton and Meinshausen's (2007) successful pilot test to deploy and collect empirical data via the web-based, self-administered, data-collection tool. This original pilot test was forwarded to 10

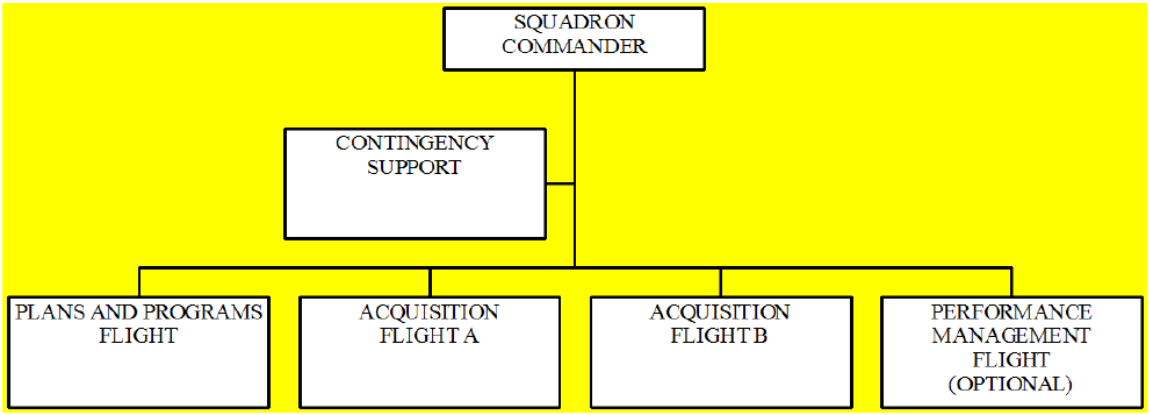
participants (Army and Marine Corps regional contracting activities)—six completed the web-based questionnaire. The survey was conducted over a period of approximately three weeks during late October to mid-November (Compton & Meinshausen, 2007). The test pilot results were assessed by the previous researchers (Compton & Meinshausen) and their recommendations incorporated prior to fielding any ongoing research efforts.

## C. QUESTIONNAIRE PARTICIPANT SELECTION

The participants for this research were selected based on their positions and/or missions within the AF contracting system. The intent of the web-based questionnaire is to provide insight into the contracting system for AF installations. Within the contracting system, operational contracting units' responsibilities include: effective acquisition planning (procurement planning and solicitation planning), solicitation, cost or price analysis, evaluation of offers, source selection, contract award and contract administration—to include contract closeout (USAF, 2006a).

According to the *Air Force Policy Directive 64-1*, the primary mission of the AF contracting system is to support the warfighter by acquiring capabilities through responsive business solutions. Figure 1 below illustrates the general structure for the execution of operational contracting support at CONUS AF bases. This traditional tactical "buying" organization is decentralized and focuses on a short-term, one-time purchasing strategy. Therefore, each AF installation is responsible for managing a product/service supply chain within the DoD. To date, the AF is the only DoD service that has not implemented a fully centralized regional framework for the acquisition of goods and services. Instead, the AF is practicing a strategic sourcing approach in the acquisition of products/services within specific service categories. However, AF senior leadership (the Secretary of the Air Force) is committed to initializing an acquisition transformation initiative to regionalize the AF CONUS contracting system and "take full advantage of strategic sourcing, optimize skilled acquisition resources, leverage buying power, and reduce the acquisition of redundant goods"—full implementation is scheduled for FY2012 (USAF, 2008).

**Figure 1. Contracting Squadron Structure (From: USAF, 2006b, p. 36)**




**Source: AFI 38-101 (2006)**

As an overall strategy, "operational contracting units provide timely, effective and efficient cradle-to-grave contract support to meet the needs of installation commanders, deployed commanders, and resident, tenant, and supported units" (USAF, 2005). Within this operational structure, contracting authority is exercised and directly executed at the installation level (not regional) to support the daily mission of the acquisition of services).

## D. SURVEY QUESTIONS

For optimal analysis, this framework was divided into four categories—administrative, core, general and comments. The administration portion identifies each participant's branch of service and the Air Force MAJCOM to which he or she was assigned.

The remaining sections of the survey (core, general, comments) directly "fit" our research questions by assessing: (1) the dominant procurement method and contract type, (2) the types of management methods, (3) the project team, (4) the acquisition leadership, and (5) the general management approaches used in the acquisition of service requirements (Compton & Meinshausen, 2007). Furthermore, the survey data and information will facilitate the further study of the five research questions presented in Chapter I of this paper.

### 1. Focus of Core Questions

The purpose of the core questions is to answer the following research question(s):

- What types of acquisition strategies, procurement methods, and contracts are being used to acquire services?
- How are these service contracts managed?
- What types of organization/management structures are used to manage contracted services?

Each core question was grouped by service categories, then into the following subcategory: contract characteristics, acquisition management methods, project-team approach and services acquisition leadership (Compton & Meinshausen, 2007).

#### *a. Contract Characteristic*

The purpose of this collection of questions was to assist us in identifying the dominant procurement method and contract type across a specific military-service population. In this segment, there are three (3) contract elements: competition, contract-type, and incentive-award type contract.

Competition is a fundamental part of services acquisition that determines acquisition strategies, procurement methods and contract types. *FAR* Part 6, competition requirements, guides the procurement process with federal statutes and regulations. These statutory and regulatory terms specifically focus on two approaches: (1) Full and Open Competition and (2) Other than Full and Open Competition. Our research question mirrored this measurement of competition: competitively bid was categorized as full and open competition, sole source as other than full and open competition. An "Other or N/A" category was added to the survey so respondents could provide input on instances in which competition or sole source did not apply (i.e., small business set-asides) or if that particular service category was not used at the respondents' installation.

Although there are several contract-type variations, our research only focused on the two broad categories of fixed-priced and cost-type. In addition, an "Other or N/A" category was added to the survey so respondents could provide input even if

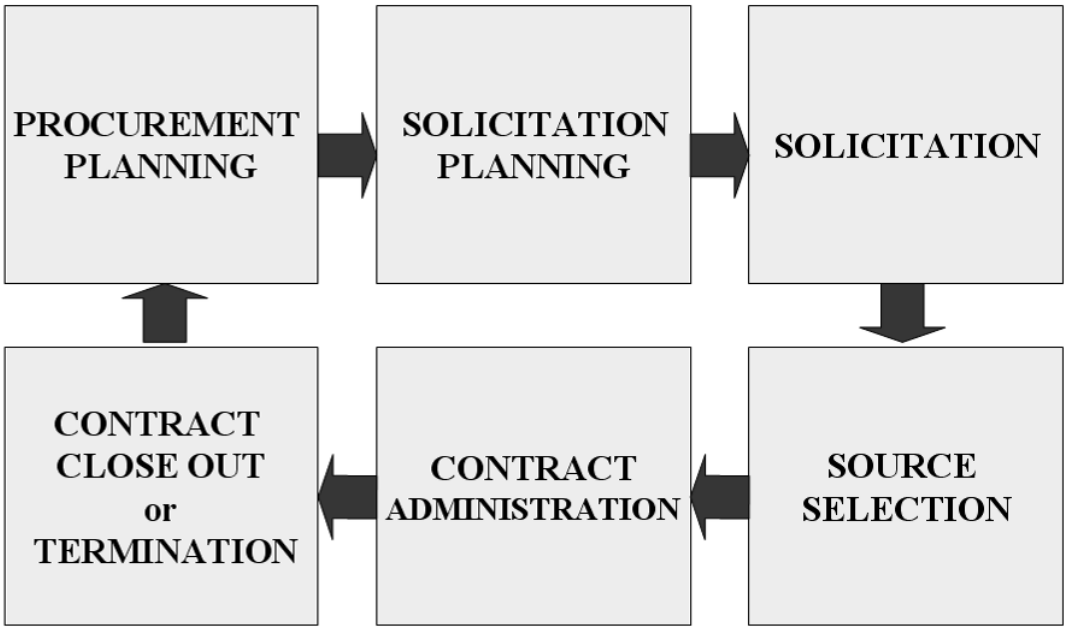
fixed- or cost-type contracts were not used (i.e., Indefinite-delivery, Indefinite-quantity (IDIQ)-type contracts) or if that particular service category was not used at the respondents' installation. *FAR* Part 16 and applicable supplements provide the overarching guidance regarding when a contract type is suitable for the procurement of products/services and what factors to consider during selection and negotiation phases.

As applicable, the survey instrument listed the following variations for the incentive/award type questions: incentive fee, award fee and award term. *FAR* Subpart 16.4 provides the descriptions, applications and limitations for incentive contracts. An "Other or N/A" category was added to the survey so respondents could provide input if no incentive-type contracts were used in the acquisition of that service category.

#### *b. Acquisition Management Methods*

The purpose of this question was to review each phase of the acquisition process at the regional and/or installation level. Although several models exist that diagram the acquisition process, our research focused on five of the six common phases for the procurement of services: procurement planning, solicitation planning, solicitation, source selection and contract administration. Figure 2, *The Contract Management Process*, illustrates the process represented in this section of survey questions. Chapter II provided a description of each phase of the contract management process. For respondents answering the phases query, an "Other or N/A" category was available if the appropriate answer was not listed or the individual was unsure. In addition, this core question also requested the respondent to address whether a project-team approach was "typically" used in conjunction with services acquisition. Depending on the respondents' "Yes" or "No" answer, the survey logic design advanced each participant to the appropriate segment of questions, as addressed in the next section.

**Figure 2. The Contract Management Process**
(From: Garrett & Rendon, 2005, p. 24)




### *c. Project-team Approach*

The purpose of this collection of questions was to further explore the respondents' previous project-team answers as a two-part question: when a project-team approach is used, who leads the team and who generates/approves changes to requirements? For a better understanding, although mentioned (but not defined) in the previous paragraph, Apte & Rendon (2007), summarizes a project-team approach as:

> A disciplined program management methodology includes the establishment of integrated project teams consisting of project team members representing each of the different functional areas that are part of the project effort. For example, a project team may include functional experts representing the various processes used in the project, such as risk management, requirements management, and contracts management. These functional experts on the project team are responsible for providing their expertise in support of the project objective. Although the project team consists of these various functional experts, the activities of these project team members must be coordinated and integrated to ensure accomplishment of the project's objective.

"This segment of questions provided information about the owner, generator, and approving authority for requirements and their relation to each service category" (Apte, 2008).

#### *d. Service Acquisition Leadership*

As stated earlier in Section a2, depending on the respondents' "Yes" or "No" answer, the survey logic design advanced each participant to the appropriate segment of questions. The purpose of this collection of questions further explored the respondents' previous project-team answers as a two-part question: when a project-team approach is not used, who leads the team and who generates/approves changes to requirements? "This segment of questions also provided information about the owner, generator, and approving authority for requirements and their relation to each service category" (Apte, 2008).

### 2. Focus of General Acquisition Management Questions

The purpose of these general questions was to answer the following research question(s):

- How are these service contracts managed?
- What types of organization/management structures are used to manage contracted services?
- What training does contract and project/program management staff receive?

This section of general questions reviews the lifecycle approach, use of market research techniques and other related acquisition management factors (i.e., level of staffing available, level of training provided and length of assignments served). Figure 3, *Services Lifecycle Model*, illustrates the six lifecycle phases (Define, Source, Buy, Ensure Quality and Administer) represented in this section of survey questions. The lifecycle model applies project/program management concepts to services acquisition. Identified as exploratory research, the authors (Apte and Rendon, 2007) introduced a conceptual lifecycle model and observed that a disciplined management approach may mitigate

several management and oversight issues identified by GAO regarding service contracting. Overall, their ongoing research "concluded that the basic project management concepts such as project lifecycle, integrated processes, project team, project manager, and organizational structure can be applied to the acquisition of services" (Apte and Rendon, 2007).

**Figure 3. Services Lifecycle Model**
(From : Apte & Rendon, 2007, p. 25)

This section of the survey also used a Likert scale to measure the responses of 12 statements or questions as levels of agreement or disagreement: strongly disagree, disagree, neutral, agree, strongly agree and not applicable. Lastly, this survey instrument offered a comment and feedback opportunity for participants to express concerns or recommendation for the survey design or any services acquisition topic.

## E. SUMMARY

This chapter described the survey instrument design and execution. Now that this chapter has tried to give the reader a complete understanding of the questionnaire's structure and objectives, Chapter IV will focus on the data-collection analysis—in particular, the findings and results.

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# IV. SURVEY RESULTS AND ANALYSIS

## A. INTRODUCTION

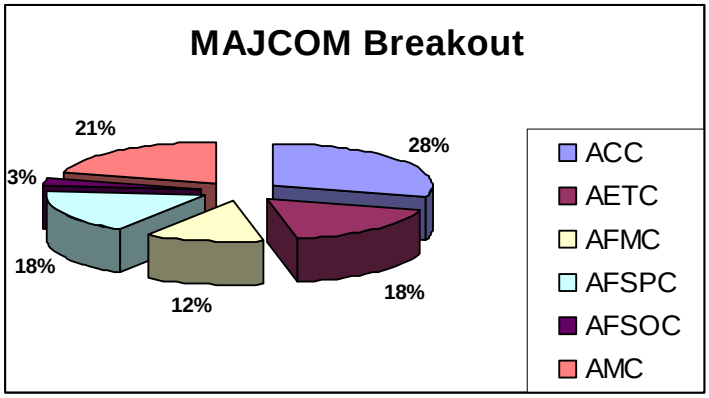
This chapter focuses on the responses to our 86-question, web-based survey that focused on the acquisition management of service contracting at the installation level. Additionally, the survey asked questions pertaining to procedures and policies based on contractor oversight. The survey was distributed across six separate MAJCOMs to 50 Air Force Contracting Squadron Commanders. The survey had a response rate of 68% or 34 responses. The individual contracting squadron commanders are responsible for the service acquisitions at their particular Air Force installation. Their responses indicate that there is a lack of program management in the service acquisition process.

## B. OVERVIEW OF DATA COLLECTED

The survey instrument was categorized into four main sections: administrative questions, core questions, general questions, and comments. These questions were focused on specific details dealing with acquisition management of services at the Air Force installation level. Our research was designed to take a current look at how the Air Force acquired services and what contract types installations used when acquiring services. It also examined problems, manning, and training for contractor oversight.

The administrative portion of the survey focused on the respondent's branch of service and MAJCOM. All 34 respondents were from the USAF. Out of the 34 respondents, 10 were located within ACC; 7 were from the AMC; 6 were from the AETC; 6 were from the AFSPC; 4 were from the AFMC; and, finally, 1 was from the Air Force Special Operations Command (AFSOC) MAJCOM. This survey data needed to be unbiased; thus, the survey was anonymous. Due to the anonymity, we do not know from which specific bases respondents answered the survey. Listed below are results from the administrative portion of the survey.

**Figure 4. Response Distribution**




The core questions focused on four separate service categories that were discussed in Chapter I: professional, administrative and management support; maintenance and repair of equipment; data processing and telecommunications; and transportation and travel. Within each service category, questions were asked. The methodology and logic for these questions were discussed in Chapter III. Our research examined the results of each service category; the analysis associated with each service category is discussed later in this chapter.

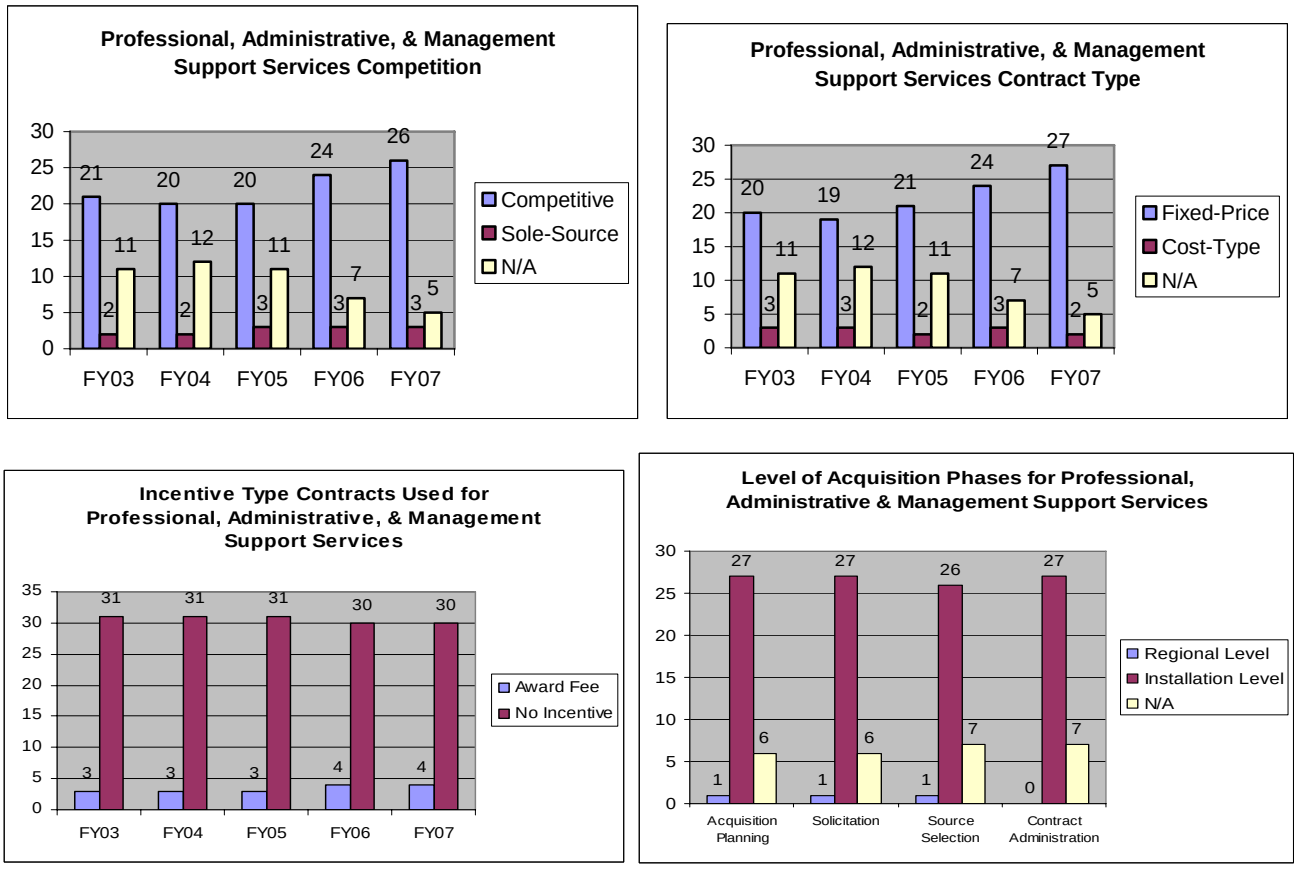
The general questions portion of the survey was comprised of 12 statements, to which the respondents of the survey would indicate their level of agreement or disagreement based on a predetermined scale. The levels of agreement on this scale were: Strongly Disagree, Disagree, Neutral, Agree or Strongly Agree. The responses to these questions lead us to believe that manning within the USAF is a serious problem according to Contracting Commanders. Additionally, training personnel does not seem to be a problem according to these respondents. The analysis associated with each statement and level of agreement is discussed later in this chapter.

## C. DATA ANALYSIS

### 1. Professional, Administrative, & Management Support Services

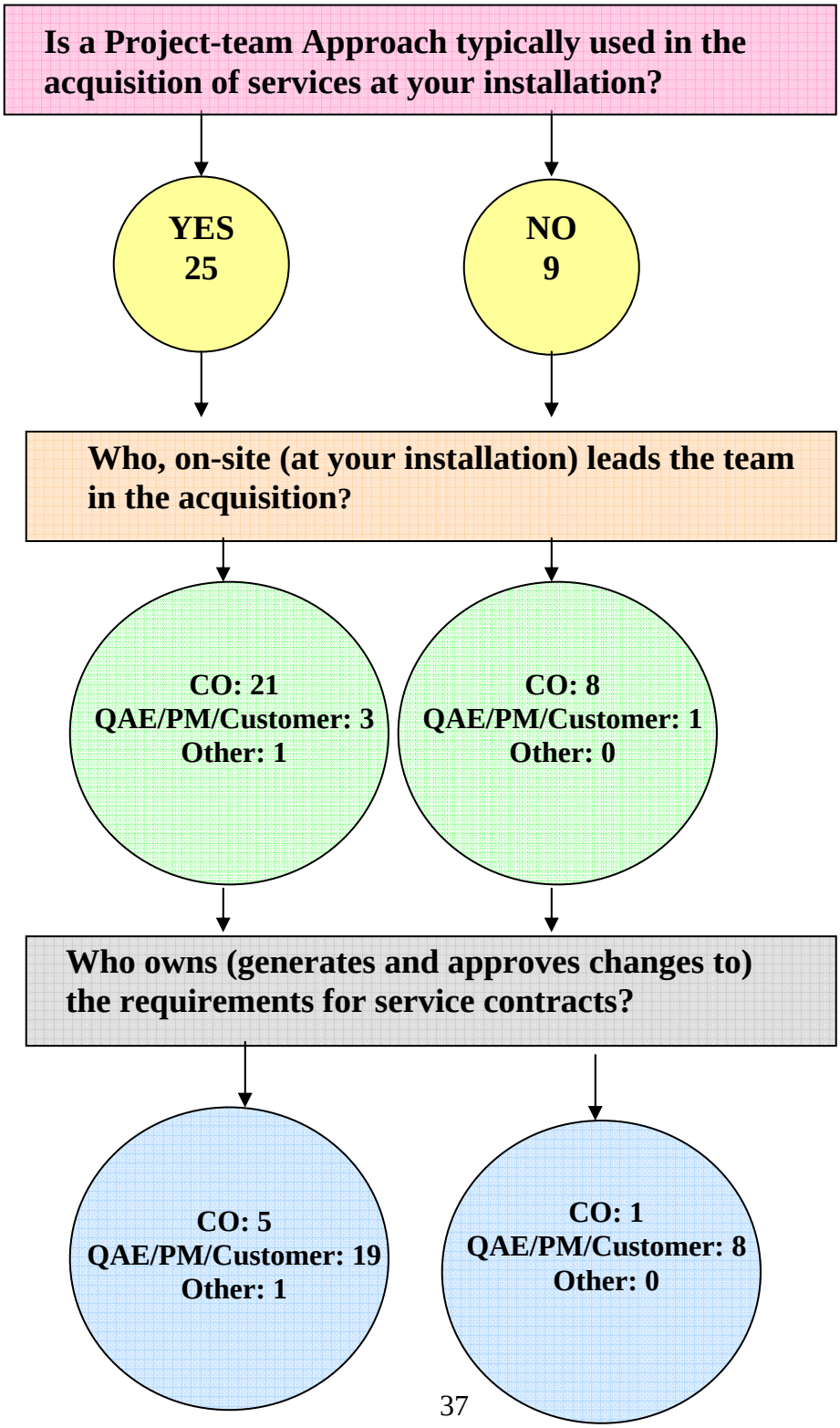
By examining the numbers associated with this service code (see Figure 5), we see that a competitive approach is used 59% to 76% (FY03–FY07) of the time, while sole-source is only used 6% to 9% of the time (FY03–FY07). Additionally, fixed-price-type contracts are used 56% to 79% (FY03–FY07) of the time, while cost-type contracts are only used 6% to 9% of the time (FY03–FY07). Incentives are rarely used in any capacity—only 9% to 12% of the time. Finally, most of the professional, administrative, and management support services were acquired at the installation level (76% to 79%). Listed below in Figure 5 is the re-cap for the first four core questions.

**Figure 5. Professional, Administrative, & Management Support Services Core Question Re-cap**



By examining the results of our survey, we can see that a project-team approach was used in a majority of the acquisitions for professional-, administrative-, and management-support services. Additionally, regardless of whether or not the respondent used a project-team approach, the contracting officer usually led the acquisition, and the customer usually owned the requirements.

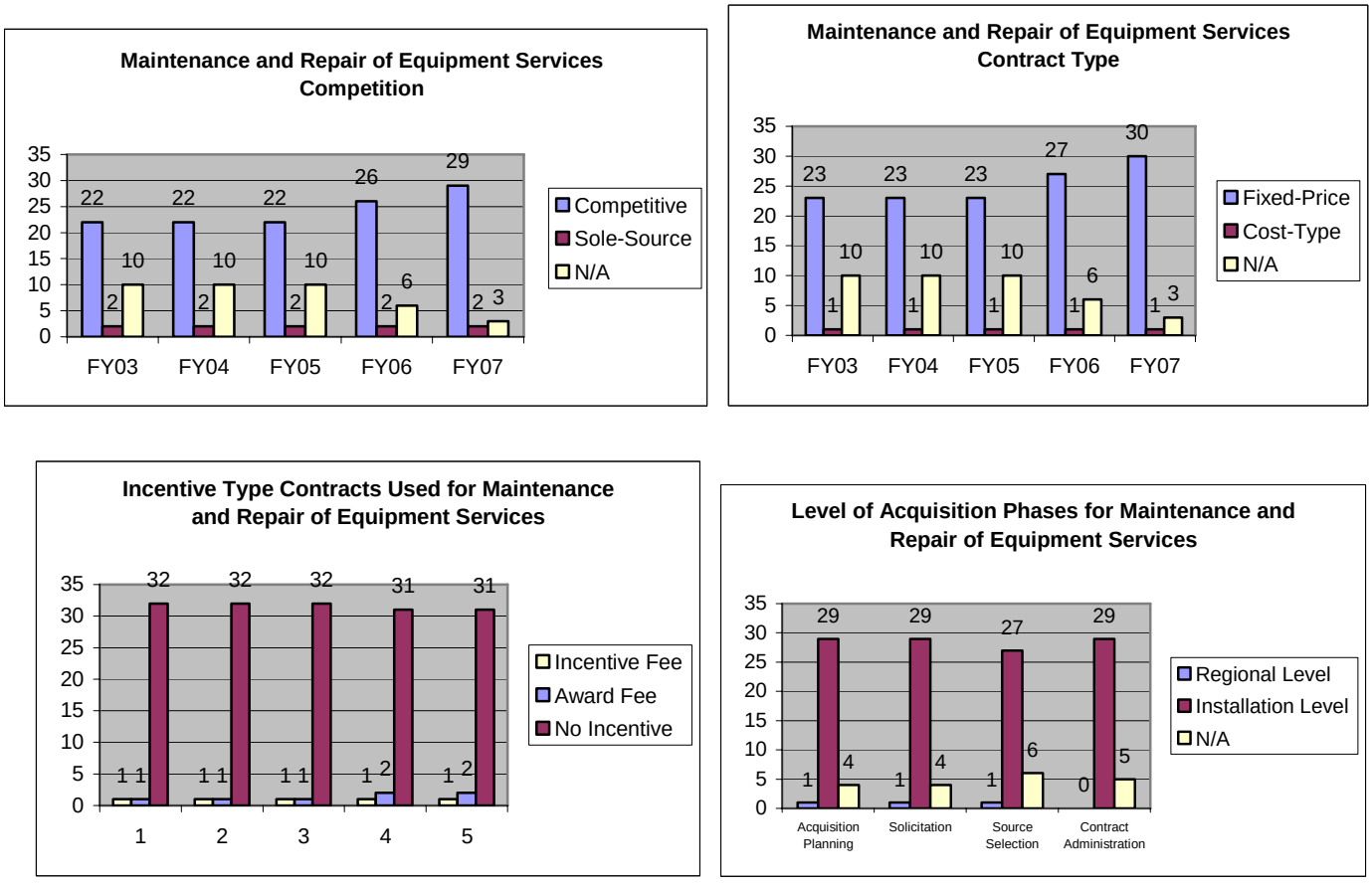
**Figure 6. Professional, Administrative & Management Support Services Project team approach**



### 2. Maintenance and Repair-of-equipment Services

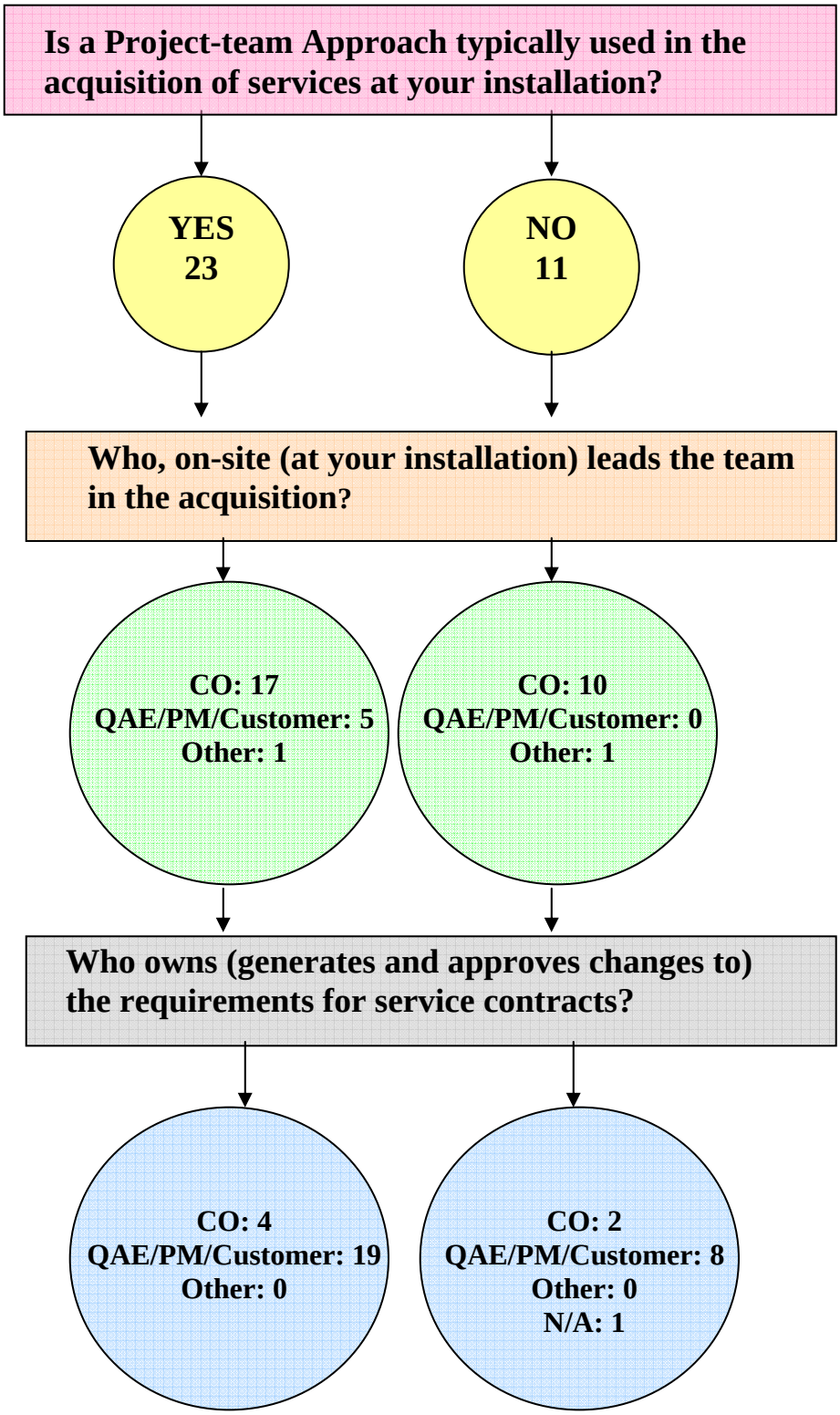
By examining the number associated with this service code (see Figure 7), we see that a competitive approach is used 65% to 85% (FY03–FY07) of the time, while sole-source is only used 6% of the time consistently (FY03–FY07). Additionally fixed-price-type contracts are used 68% to 88% (FY03–FY07) of the time, while cost-type contracts are only used 3% of the time consistently (FY03–FY07). Incentives are rarely used in any capacity—only 3% to 6% of the time. Finally, most of the maintenance and repair-of-equipment services were acquired at the installation level (79% to 85%).

**Figure 7. Maintenance and Repair-of-equipment Services Core Question Re-cap**



The results of our survey reveal that a project-team approach was used in a majority of the acquisitions for maintenance and repair-of-equipment services. Additionally, whether the respondent used a project-team approach or not, the contracting officer usually led the acquisition, and the customer usually owned and approved changes to the requirements (see Figure 8).

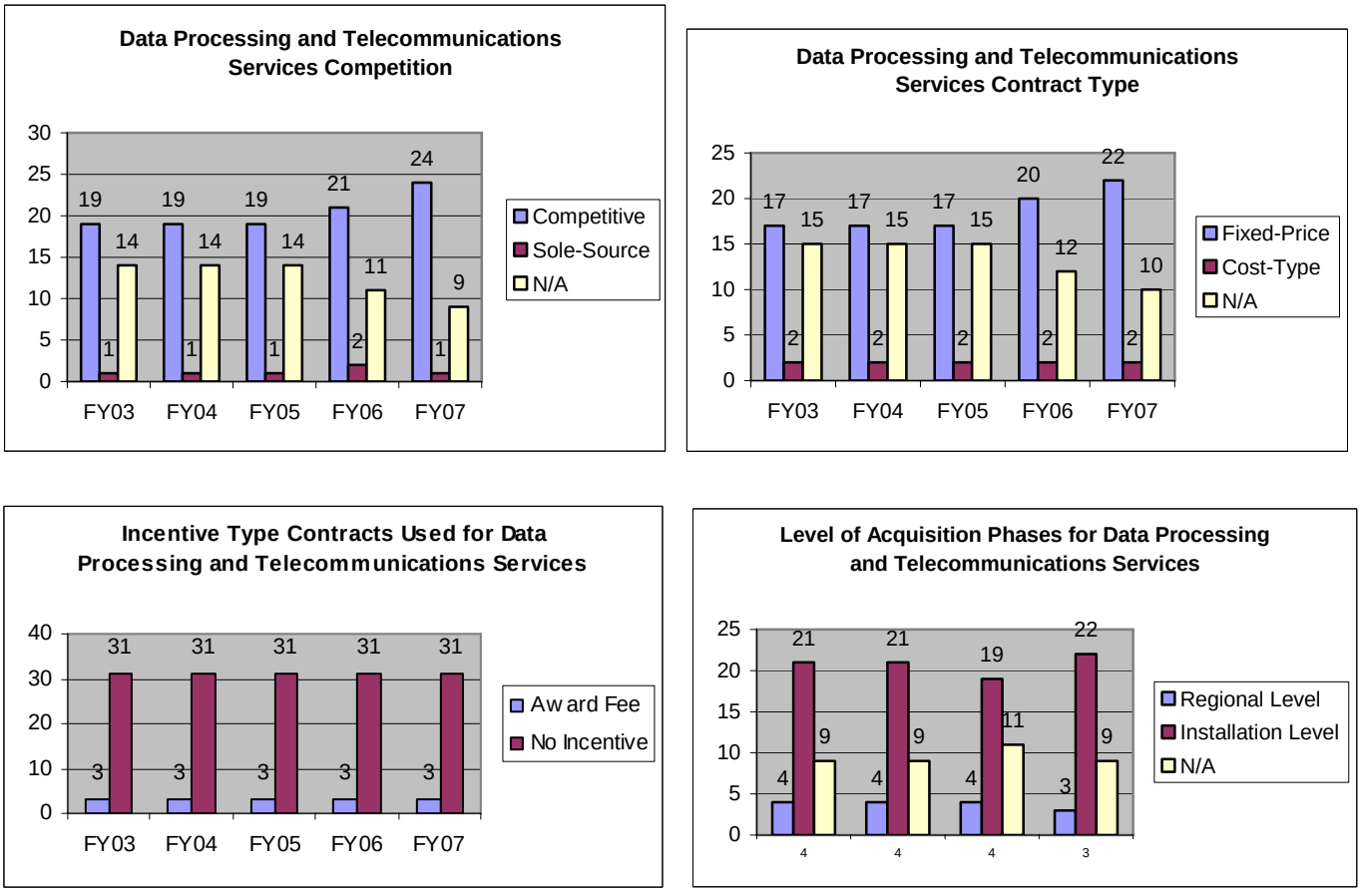
**Figure 8. Maintenance and Repair-of-equipment Services Project-team approach**



### 3. Data Processing and Telecommunications

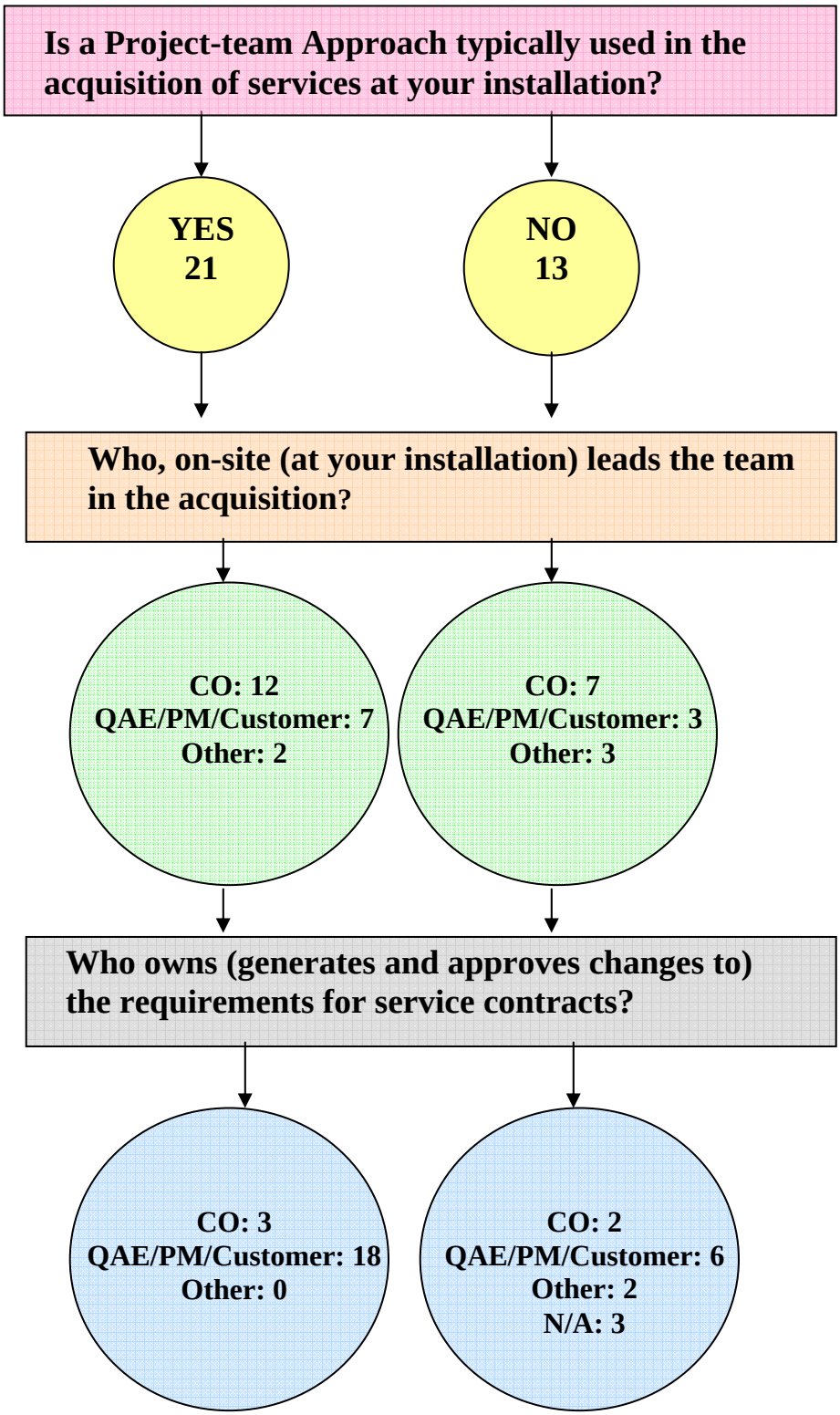
By examining the number associated with this service code (see Figure 9), we see that a competitive approach is used 56% to 71% (FY03–FY07) of the time, while sole-source is only used 3% to 6% of the time (FY03–FY07). Additionally, fixed-price-type contracts are used 50% to 65% (FY03–FY07) of the time, while cost-type contracts are only used 6% of the time consistently (FY03–FY07). Incentives are only used 9% of the time consistently. Finally, most of the data processing and telecommunications services were acquired at the installation level (56% to 65%).

**Figure 9. Data Processing and Telecommunications Services Core Question Re-cap**



The results of our survey reveal that a project-team approach was used in a majority of the acquisitions for data processing and telecommunications services. Additionally, whether the respondent used a project-team approach or not, the contracting officer usually led the acquisition and the customer usually owned and approved changes to the requirements.

**Figure 10. Data Processing and Telecommunications Services Project-team approach**

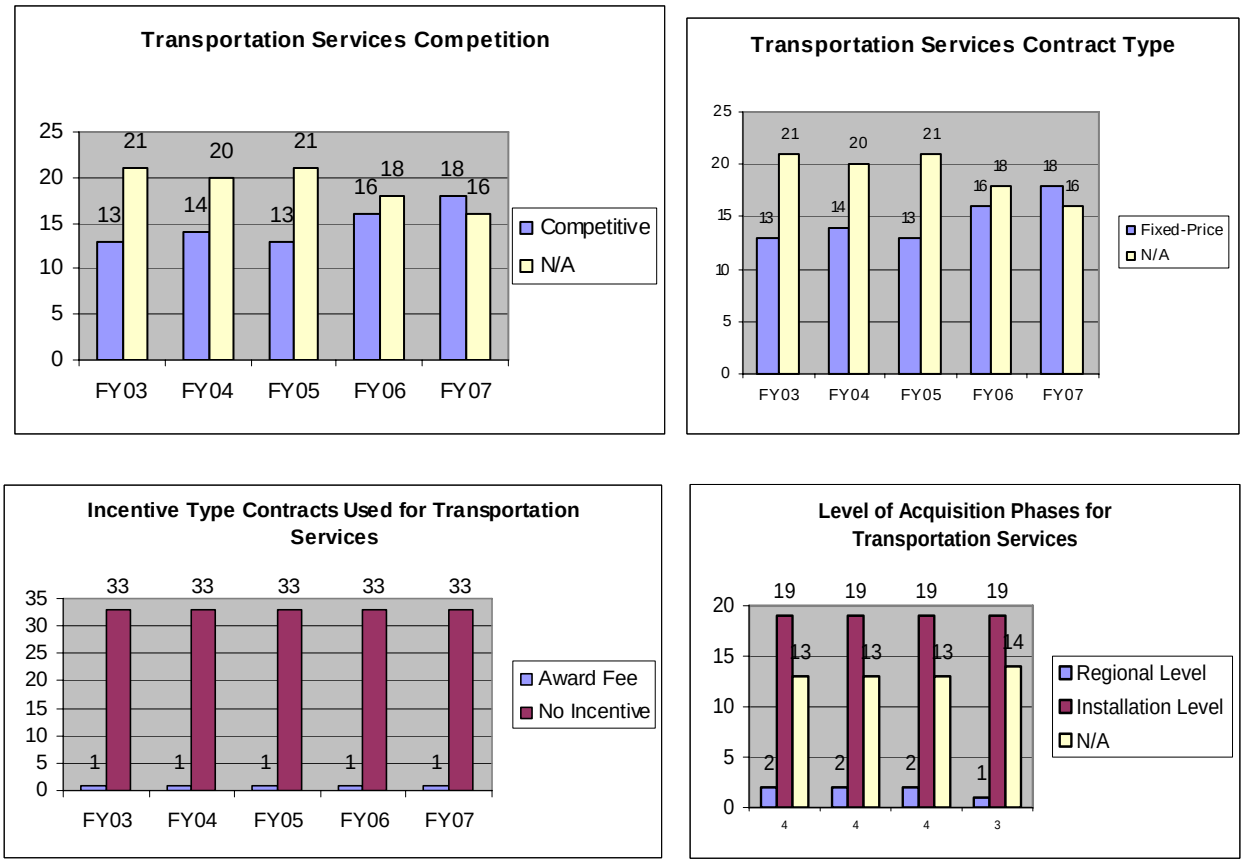


### 4. Transportation and Travel Services

By examining the number associated with this service code (see Figure 11), we see that a competitive approach is used 38% to 53% (FY03–FY07) of the time, while sole-source is not used at all (FY03–FY07). We also see a high number of responses claim Not Applicable (N/A) in this service category (47% to 62%). This may be due to the fact that many installations do not purchase transportation within their Contracting Squadron. Another answer to the high N/A number is the fact that contracting squadrons might cut deliver/task orders off large indefinite-quantity, indefinite-delivery-type contracts; thus, the respondents answered N/A to this question. Additionally, fixed-price-type contracts are used 38% to 53% (FY03–FY07) of the time, while cost-type contracts were not used at all. Incentives are only used 3% of the time consistently. Finally, most of the transportation and travel services were acquired at the installation level (56% consistently).

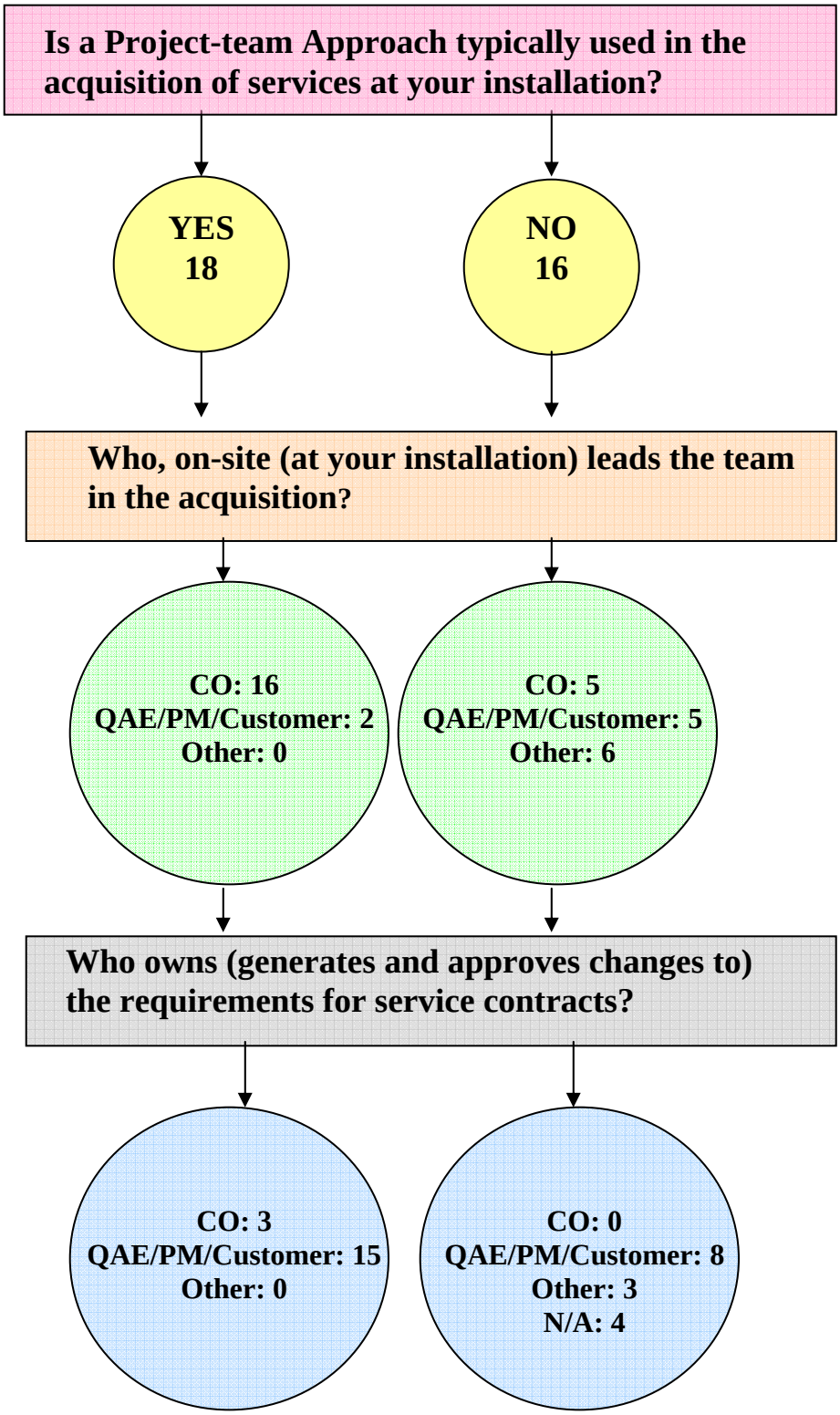
After examining the responses to the transportation and travel service code, we come to the conclusion that the definition of "Transportation and Travel" might have been misinterpreted by some of the respondents. Our research was designed to focus on the contracting of transportation services that dealt specifically with maintenance of installation vehicles, with shuttle buses that transport personnel to various stops around an organization, and with transportation services of basic installation needs (cars, buses, airfield vehicles etc.). Our research team came to the conclusion that clear definition of "transportation and travel" requirement is needed for further research. Since the AF's policies and procedures that mandate "how" personnel obtain services for transportation and travel, we assume the respondents to our survey did not clearly understand this particular service category.

**Figure 11. Transportation and Travel Services Core Question Re-cap**




The results of our survey reveal that a project-team approach was used in most of the acquisitions for transportation and travel services. Due to the fact that there were a large number of N/A responses in this particular service category, we see mixed results in the survey data. If the respondent answered "NO" to the use of a project-team approach, we see that the customer's organization leads the acquisition of services as much as the contracting officer. This is the only one of the four service categories that displays this pattern. If the respondent answered "YES" to the use of a project-team approach, we see that the results are similar to the other three service categories. The researchers believe this occurrence is due to the fact that respondents were confused about the definition of the response "Non-Applicable."

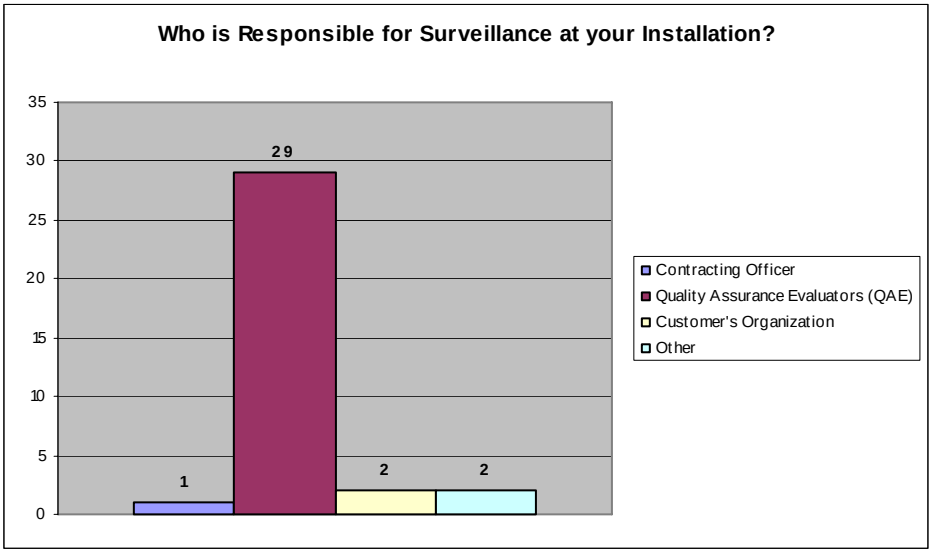
**Figure 12. Transportation and Travel Services Project-team approach**



### 5. General Survey Questions

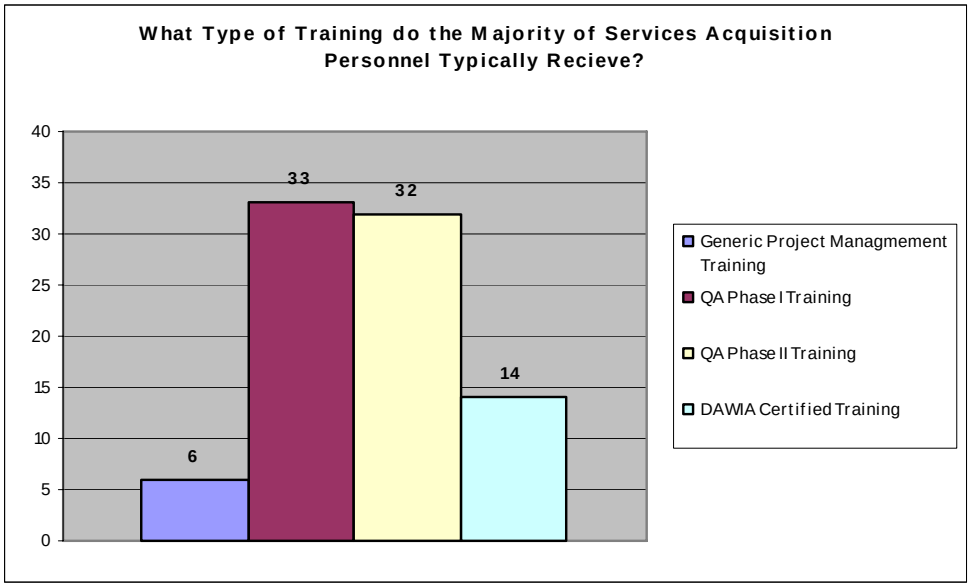
The final portion of our survey had to do with general questions concerning the acquisition of services at the installation level. All installations that responded to our survey replied that contracting officers are the personnel who write and award contracts to provide services (100%). Additionally, 91% of the respondents replied that either QAEs or the customer's organization are responsible for the surveillance of a contractor's performance.

**Figure 13. Responsibility for Surveillance**



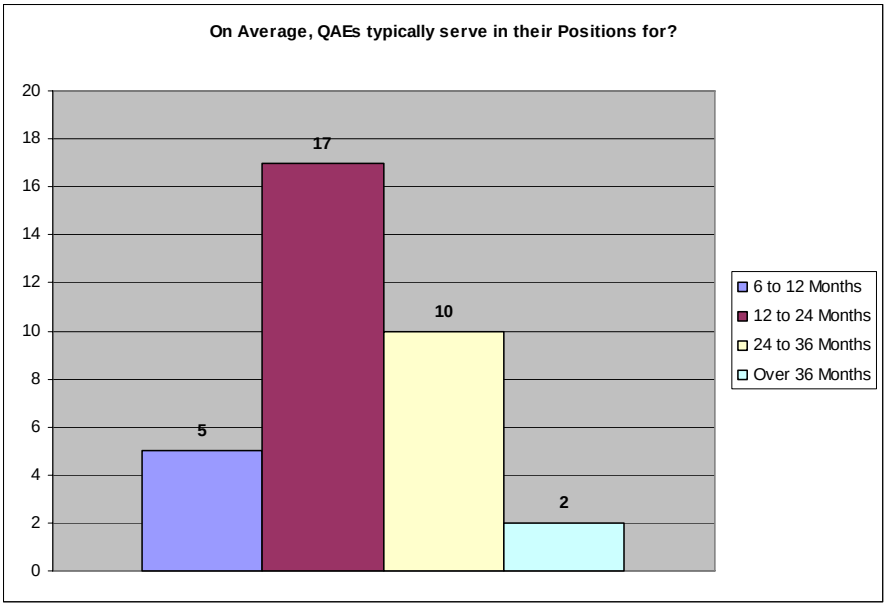

By examining the training aspect of the survey, we see that the required training listed in the *AFI 63-124, Performance-based Contracting*, is being followed by a majority of Air Force installations (USAF, 2005). Phase I and Phase II training are being conducted in over 90% of Air Force installations. However, only 41% of the respondents replied that their service acquisition personnel received *DAWIA* certified training.

**Figure 14. Training Received**




Listed below (Figure 15) is the time on station (stationed at a particular base) for personnel slotted in QAE positions. A significant majority of the respondents stated that QAEs typically stay on station 12 to 36 months (79%). Although this is a large variation, 50% of the sample can be narrowed down to 12 to 24 months' time on station. This is not that long of a timeframe, considering training and inspection experience take up at least half of that time.

**Figure 15. QAP Time in Position**

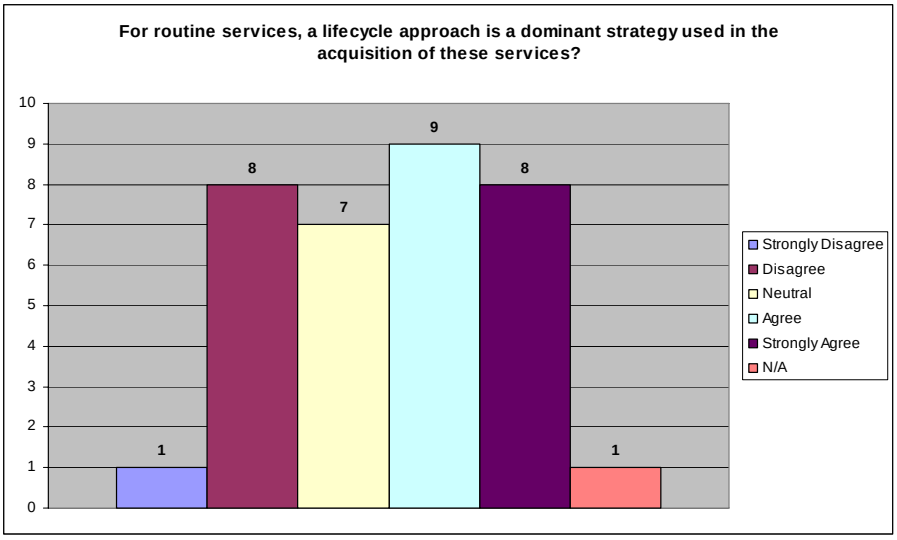



### 6. Likert Scale Statements

A review of the 12 Likert scale statements within this section leads us to some conclusions about the current situation at most Air Force Contracting Squadrons. Contracting Commanders' responses to these questions lead us to believe that manning within the USAF is a serious problem. However, according to these responses, market research and proper QAE training is being conducted in a majority of Air Force Contracting Squadrons; therefore, these issues are not a concern.

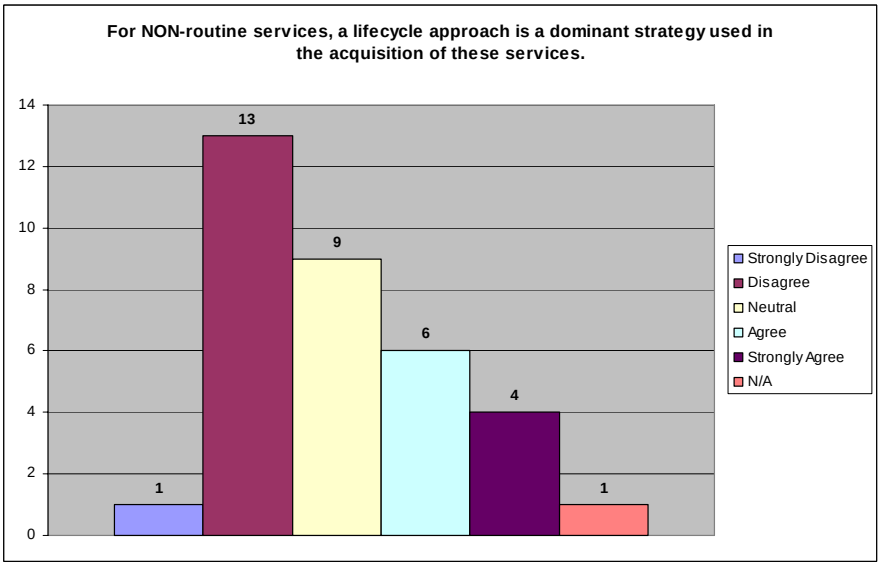
The first two Likert survey statements dealt with routine versus non-routine services. Non-routine services do not provide the predictability of routine services, and thereby do not allow contracting officers to use a lifecycle approach strategy. As seen in the figures below, a lifecycle approach strategy is more often going to be used for routine services than for non-routine services.

**Figure 16. Use of Lifecycle Approach—Routine Services**




***Routine services:*** *A lifecycle management approach was used by 50% of respondents and not used by 26% of the respondents. 20% of the respondents were neutral.*

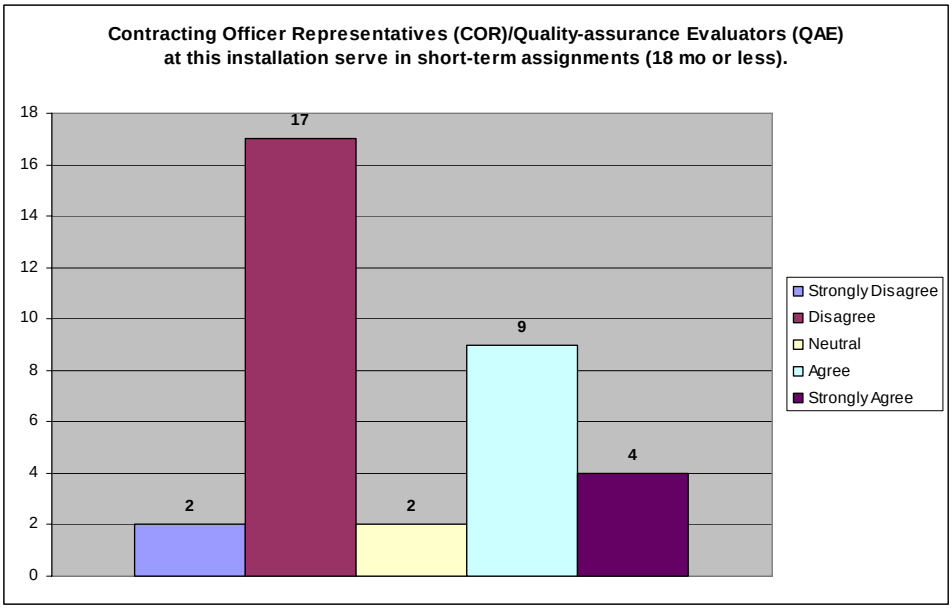
**Figure 17. Training Received—Non-routine Services**




***Non-Routine services:*** *A lifecycle management approach was used by 29% of respondents and not used by 41% of the respondents. 26% of the respondents were neutral.*

The next Likert scale statement dealt with short-term assignments for QAEs. This response correlates with a previous survey question concerning assignment timelines. The statement to which the respondents were to agree or disagree specifically stated that the COR/QAE at their installation served short-term assignments of 18 months or less. A majority of the respondents disagreed or strongly disagreed—thereby stating that COR and QAE serve their assignments longer than 18 months.

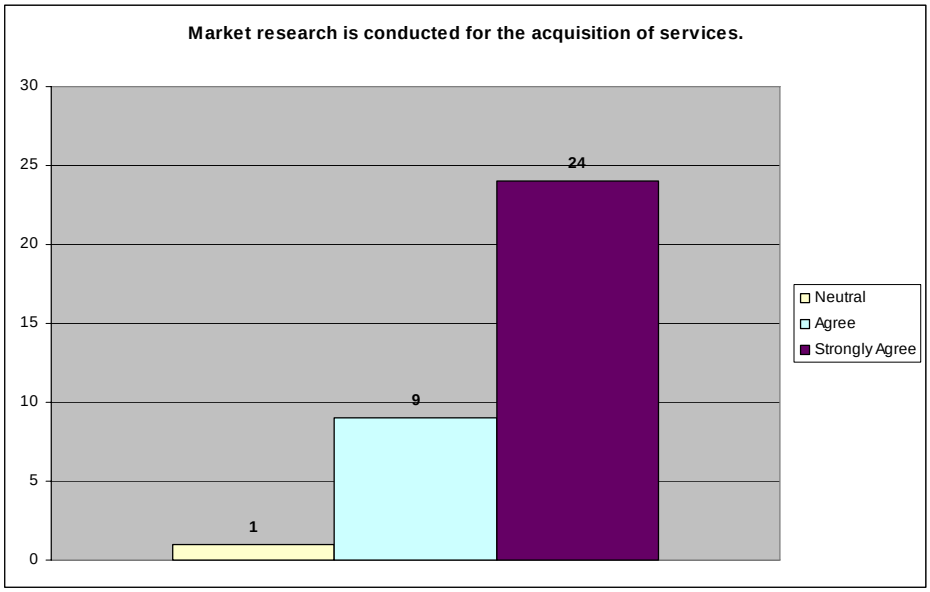
**Figure 18. Short-term Assignments**




*Over 55% disagreed or strongly disagreed that CORs or QAEs served in short-term assignments, while 38% of the respondents agreed or strongly agreed that COR and QAE serve in short-term assignments.*

The fourth Likert scale survey statement dealt with whether or not market research was conducted for the acquisition of services at the respondents' installation. An overwhelming majority responded that market research was being conducted in the acquisition of services. There were no respondents that answered "disagree" or "strongly disagree."

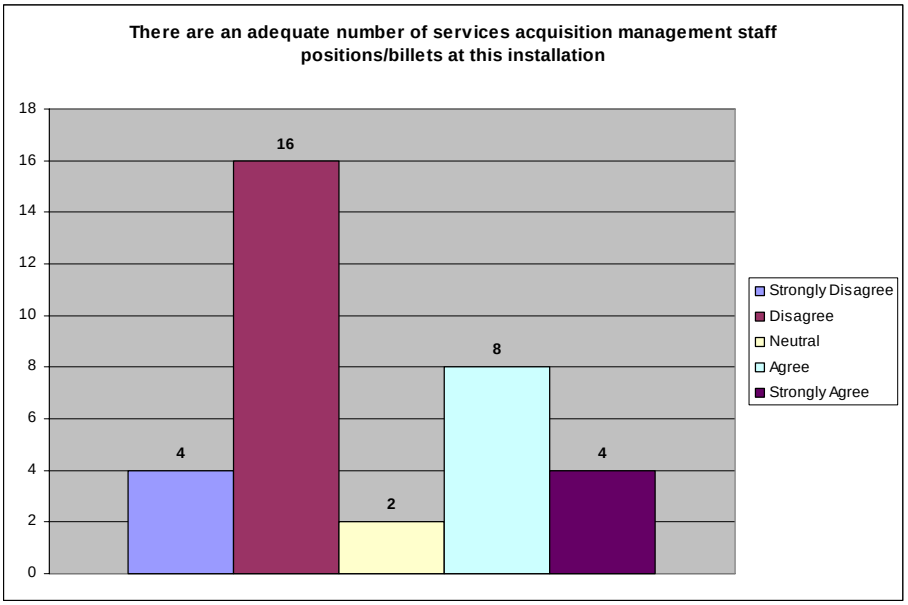
**Figure 19. Market Research Conducted**




*Over 97% of the respondents responded that market research was being conducted for services. There were no respondents that disagreed with this statement.*

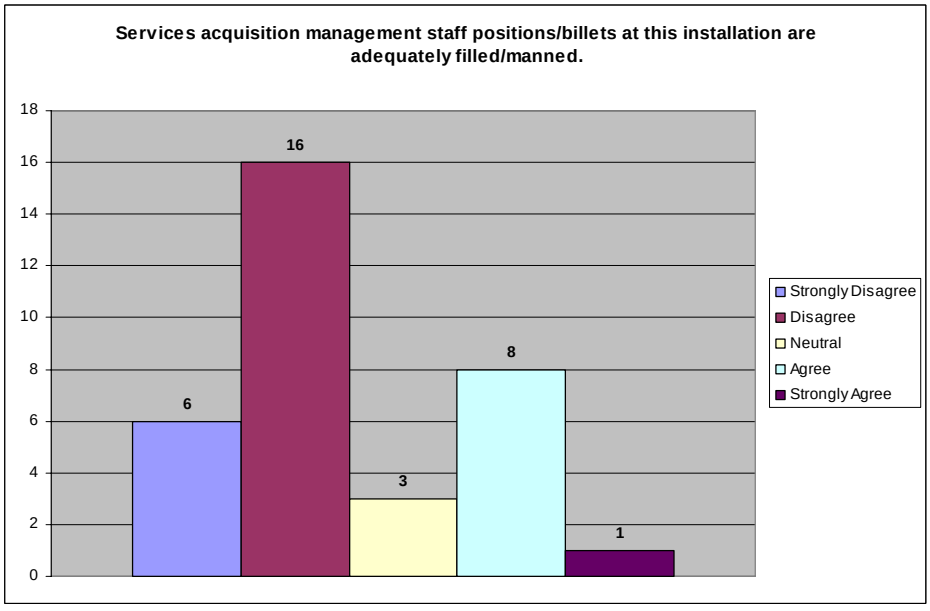
The two Likert scale statements below focused on the installation's manning issues. The first statement asked about whether or not there were enough billets within their organization to complete their mission. The following statement then focused on whether those positions/billets were actually filled. By examining the responses for these two statements, we see that this is one of the biggest problem areas for Air Force installations. According to the responses, there are not enough billets to complete the mission given to Contracting Commanders. Additionally, these positions that are not enough to meet the mission, are not even filled. As discussed in Chapter II, the Department of Defense has outsourced a large portion of the services needed for the military installations; however, the manning associated with acquiring and administering these commercial entities has not been distributed.

**Figure 20. Adequate Staffing**




*Over 58% of the respondents either disagreed or strongly disagreed that manning positions/billets were adequate, while 35% of the respondents agreed or strongly agreed that there were adequate positions/billets.*

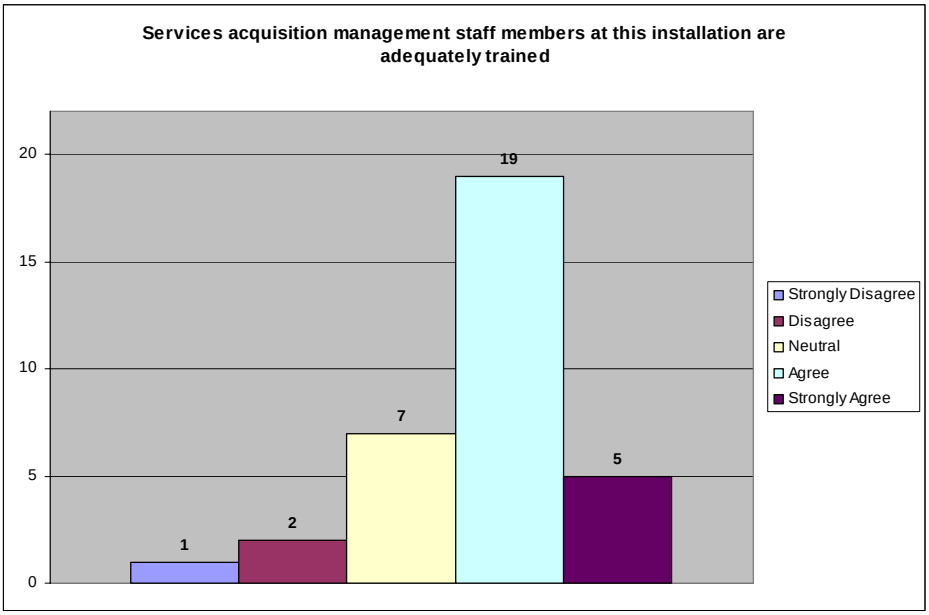
**Figure 21. Positions Adequately Filled**




*Over 64% of the respondents either disagreed or strongly disagreed that positions/billets were adequately filled, while 26% of the respondents agreed or strongly agreed that positions/billets were adequately filled.*

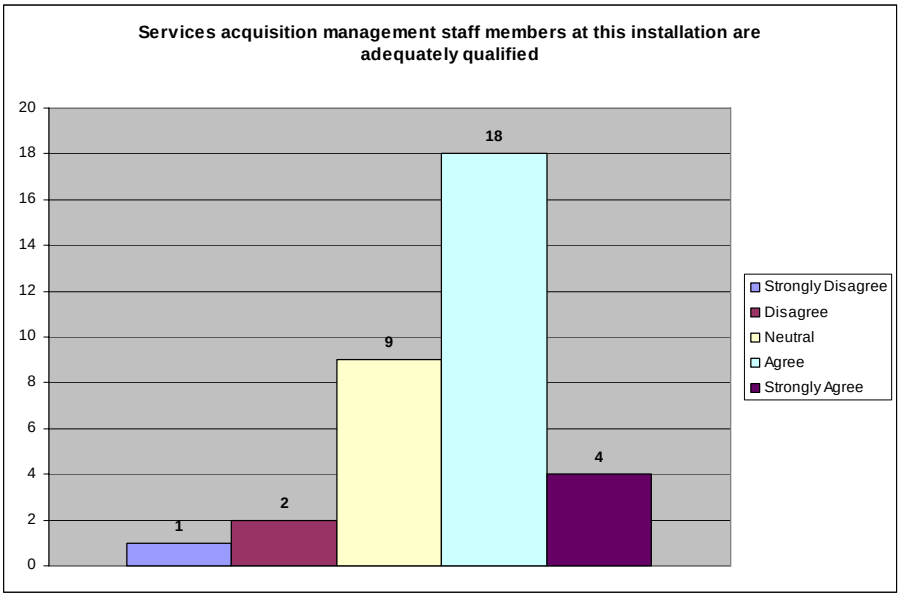
The two following Likert scale statements concentrated on the workforce within the contracting squadrons. The first statement focused on if the acquisition management staff was adequately trained. The second statement asked if the contracting workforce was adequately qualified. In both instances, the respondents deemed the contracting workforce both adequately trained and qualified to meet the required mission. With the establishment of the *Defense Acquisition Workforce Improvement Act* (*DAWIA*), the Department of Defense now has a standard with which the acquisition workforce can be certified based on both its members' education and their experience. These responses are a result of the investment the Air Force has made in training and growing its acquisition workforce.

**Figure 22. Staff Training Received**




*Over 52% of the respondents either agreed or strongly agreed that acquisition management staff members were adequately trained, while only 8% of the respondents disagreed or strongly disagreed that acquisition management staff members were adequately trained.*

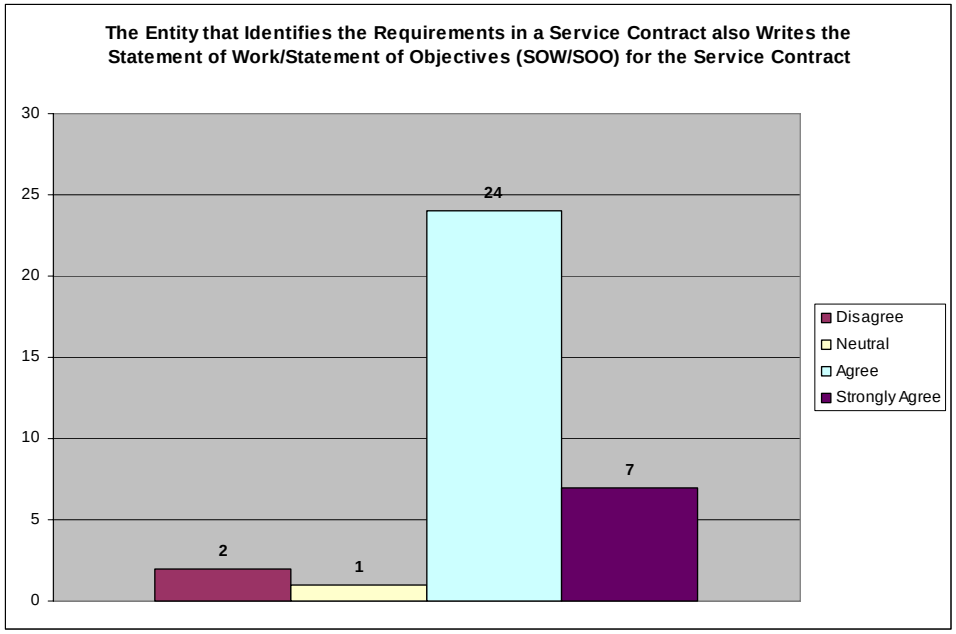
**Figure 23. Staff Qualifications**




*Over 64% of the respondents either agreed or strongly agreed that acquisition management staff members were adequately qualified, while only 8% of the respondents disagreed or strongly disagreed that acquisition management staff members were adequately qualified.*

The next Likert scale statement dealt with the responsibilities of the customer. The roles and responsibilities of the requiring agency or the customer are outlined in Chapter II of this report. The customer who identifies the requirements is responsible for writing the Statement of Work (SOW) or Statement of Objectives (SOO). This Likert statement asked if the customer was actually writing these documents for service contracts. According to the respondents, it seems that the customer was meeting its obligation to write the SOW or SOO. There was an overwhelming agreement that the customer was doing its job in the requirement-generation area.

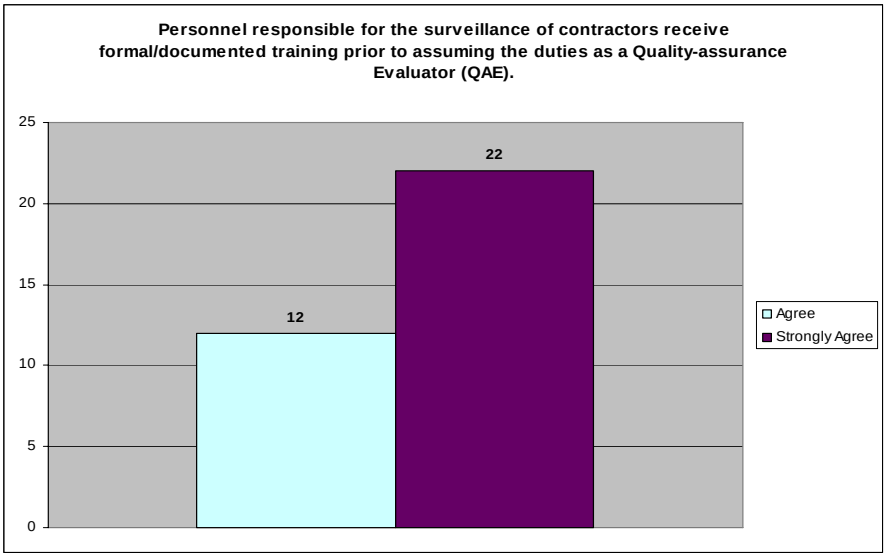
**Figure 24. Identifying Contract/Writing SOW**




*Over 82% of the respondents either agreed or strongly agreed that the entity that identifies the requirement also writes the SOW/SOO, while only 5% of the respondents disagreed or strongly disagreed that the entity that identifies the requirement also writes the SOW/SOO.*

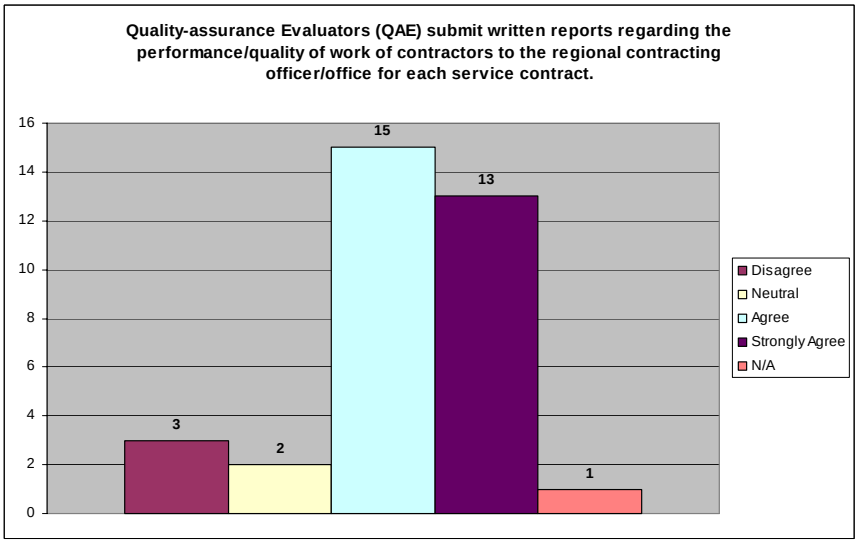
The tenth and eleventh Likert scale survey statements dealt with whether or not QAEs received formal/documented training and whether or not QAEs submit written reports of surveillance to contracting officers. An overwhelming majority responded that formal documented training was being conducted for QAE personnel before surveillance begins. There were no respondents that answered "disagree" or "strongly disagree" to this statement. A 2005 GAO report suggested that QAPs were not being properly trained; it claimed a large number of surveillance personnel would start to inspect contractor's performance without adequate training (GAO, 2005). Our survey results show that the Air Force installations do not fall into this category identified by the 2005 GAO report. A significant majority of respondents (85%) stated that QAEs are submitting written reports to the contracting officers regarding the performance/quality of their contractors.

**Figure 25. Surveillance Training Received as QAE**




*100% of the respondents felt that proper training was being conducted and documented before surveillance occurred. There were no respondents that disagreed with this statement.*

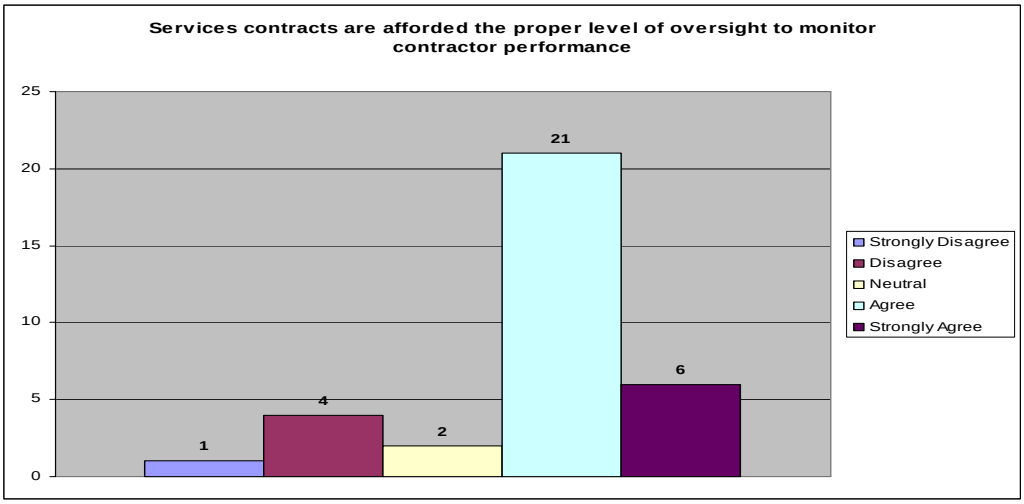
**Figure 26. QAE Reporting**




*Over 85% of the respondents either agreed or strongly agreed that the QAEs submit written reports regarding the performance/quality of contractors, while only 8% of the respondents disagreed or strongly disagreed that the QAEs submit written reports regarding the performance/quality of contractors.*

The final Likert scale statement deals with an overall assessment of oversight for service contracts and provides insight into the effectiveness (or, what is considered a proper level?) of contract management. Our survey responses report that over 79% of our respondents agreed or strongly agreed that contract surveillance is being conducted in an effective manner to provide proper oversight.

**Figure 27. Level of Oversight**




*Over 79% of the respondents either agreed or strongly agreed that the service contracts are afforded the proper level of oversight to monitor contractor performance, while only 14% of the respondents disagreed or strongly disagreed that the service contracts are afforded the proper level of oversight to monitor contractor performance.*

## D. SUMMARY

This chapter illustrated the current state of acquisition management of service contracting at the Air Force installation level. The chapter concentrated on the responses to our 86-question, web-based survey. The survey had a response rate of 68%, or 34 responses. The individual contracting squadron commanders are responsible for the service acquisitions at their particular Air Force installation. Their responses indicated that there is a lack of program management in the service acquisition process. Our next chapter focuses on a summary of our report and future recommendations for continuing research.

# V. SUMMARY, CONCLUSION AND RECOMMENDATIONS

## A. SUMMARY

The purposes of this study were to review current practices at continental United States (CONUS) AF installations in the area of services acquisition management, to disseminate a survey and collect empirical data from 50 contracting activities throughout seven AF MAJCOMs, and to access quantitative data from the Federal Procurement Data System. With application of lifecycle management concepts, the research provided an analysis of how AF installations "buy" services with regards to: 1) the dominant procurement method and contract type, 2) the types of management methods, 3) the project-team approach, 4) decisions from acquisition leadership and 5) general management approaches used in the acquisition of service requirements. This research presented a comprehensive understanding of the current services acquisition policies and practices, methods and procedures currently practiced at installation-level AF contracting activities.

## B. CONCLUSION—ANSWERS TO RESEARCH QUESTIONS

This research provided empirical data with which to conduct a comprehensive study and analysis of current procurement methods and procedures related to four service categories: professional, administrative and management support (PSC Code R); maintenance and repair of equipment (PSC Code J); data processing and telecommunications (PSC Code D), and transportation and travel (PSC Code V). From the data gathered, the research answered the following questions:

**1. What types of services are typically contracted for at military installations and what is the annual expenditure for these services?**

In answering the above question, an analysis of federal spending from the Federal Procurement Data System (FPDS) database provided quantitative data about AF service procurements. The FPDS is a robust reporting tool that provided an aggregate of federal government contract actions and related information to include the following, not all

inclusive: contracting activity, obligated award amount, product or service category, type of contract, competitive status, and business size.

This segment of research focused on the service categories and dollars spent at AF installations from FY03 to FY07. Appendix C offers an overview of services typically contracted for at AF installations and the annual expenditures for each category.

**2. What types of acquisition strategies, procurement methods, and contracts are being used to acquire services?**

In answering the above research question, the researchers focused on the survey questions that involved dominant contract characteristics (e.g., competition, contract type, incentive/award type) and dominant services acquisition management methods—e.g., at what organizational level are phases (acquisition planning, solicitation, source selection and contract administration) of the contracting process accomplished?

In the aggregate, the acquisition of services is performed throughout the contract management process at the installation level and is competitively bid with fixed-price contracts without incentives. This holds true for each category except transportation and travel services. In this situation, the participants' "not applicable" responses indicate that other procurement methods and contract types are used to "buy" transportation and travel services at installations. This exception may be caused by the AF's policies and procedures that mandate "how" personnel obtain services for transportation and travel—e.g., via the base motor pool or the Defense Travel System. To gain better insight into how contracting activities "buy" transportation and travel services, the researchers provide a survey improvement recommendation in Section C of this chapter.

**3. How are these service contracts managed?**

In answering the above research question, we focused on survey questions that involved service acquisition management methods (project-team and lifecycle approach) and services acquisition leadership (e.g., who leads the team in the acquisition of services? Are there adequate services acquisition management staff positions available and/or manned?).

In the aggregate, our research indicates that a lifecycle approach is used more often during routine services than in non-routine services. In addition, the majority of participants agreed or strongly agreed that a project management approach is implemented for routine services. However, due to the recent GAO reports documenting poor contract management and oversight, the effectiveness of the services management approach or program may be a question for further research. In the acquisition of services, our research overwhelmingly suggested that the contracting officer leads the integrated project team. Lastly, regarding staff positions adequately available and manned, participants responded negatively ("disagreed" and "strongly disagreed"). This response leads the researchers to conclude that senior contracting leaders deem their purchasing organizations to be undermanned.

**4. What types of organization/management structures are used to manage contracted services?**

In answering the above research question, we focused on the survey questions that involved service acquisition management methods and services acquisition leadership.

In the aggregate, a project-team approach was predominately used to manage contracted services supported by a functional organizational structure. Responses suggested that while the contracting officer usually leads the acquisition, writes and awards contracts to provide services, the customer (owner) generates the statement of work and approves changes to requirements or modifications to contracts. In addition, at the installation level, the responses indicated that a cradle-to-grave concept is utilized as a lifecycle approach strategy, and the appointed QAE is responsible for contractor surveillance. The research suggests that lifecycle management for service acquisitions is used more often during routine services than for non-routine services.

**5. What training does contract and project/program management staff receive?**

In answering the above research question, we focused on the survey questions that involved service acquisition management methods and services acquisition leadership.

In aggregate, the responses indicated that functional personnel (typically the QAE) manage and/or oversee the contractor's performance. Per our research, the majority of AF contracting activities provide QAEs with Phase I and Phase II training in accordance with *Air Force Instruction 63-124, Performance-based Contracting*. However, less the half of the QAEs (project management staff) receive *DAWIA*-certified training. In addition, on average, the QAEs typically serve in the position 18 to 24 months.

## C. RECOMMENDATIONS

Overall, this research provides a perspective on how AF operational contracting activities apply program management concepts to service acquisitions. This study provided empirical data and examined the contracting system in the area of service acquisition and oversight at the installation level. Based on the above conclusions, the following are recommendations for survey improvement and areas for further research:

### 1. Survey Improvement

First, the researchers recommend the removal of all "not applicable" answers from the survey to minimize confusion or uncertainty among participants. Except for the Likert scale section of the survey, the "Other (please explain)" selection is more appropriate to capture accurate and momentous responses that identify trends in the acquisition and management of services. Without a thorough explanation to inform respondents of the researchers' intent for including a "N/A" category, the participants' response may inaccurately represent how AF installations plan, procure and manage service contracts.

Second, we suggest that future researchers add Indefinite-delivery, Indefinite-quantity (IDIQ) as a contract-type option with related attributes (fixed-price or cost, etc.). Within the "Contract Type" sub-section located in the Dominant Contract Characteristics category, the researchers recommend that future researchers insert the IDIQ contract type and use the survey "skip-logic" feature to navigate between the appropriate contract characteristics. This effort would minimize uncertainty and the collection of inaccurate data from participants.

## 2. Areas for Further Research

We suggest future researchers analyze the AF Installation Acquisition Transformation (IAT) initiative and how the six-phased contracting processes and service acquisition management methods—such as a lifecycle, a program management or a project management approach—will effect or change the AF contracting system.[1] In addition, future studies should answer the following questions: at a centralized regional level, how will the AF "buy" base operation and support services with regards to: 1) the dominant procurement method and contract type, 2) the types of management methods, 3) the project-team approach, 4) decisions from acquisition leadership, and 5) general management approaches used in the acquisition of service requirements? Also, does the AF contracting senior leadership plan—to implement Program Management offices as part of the IAT to ensure service contracts—include the proper lifecycle management and contractor oversight? If so, what processes, procedures and policies are required to build this acquisition system?

Do the respective military services acquire and manage services differently?

In order to answer this question, the researchers recommend that the survey instrument used for this study be deployed to question CONUS Army and Marine installations. In our opinion, the sample size of the previous study (Compton & Meinshausen, 2007) is not adequate to document current trends of services acquisition management approaches at the installation and regional levels of respective military services.

[1] NOTE: The six-phased contracting model is illustrated in Figure 2 on page 31. The services lifecycle model is illustrated in Figure 3 on page 33.

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# APPENDIX A. REVIEWED DOCUMENT/REPORT/STUDY

| Agency | Publication Title | Date |
|---|---|---|
| GSA | *Federal Acquisition Regulation PART 46: Quality Assurance* | 2008 |
| DAU | *Contracting Officer Representative with a Mission Focus* | 2008 |
| GAO | *Defense Acquisitions: DoD's Increased Reliance on Service Contractors Exacerbates Long-standing Challenges* | 2008 |
| GAO | *Military Base Realignments and Closures: Transfer of Supply, Storage, and Distribution Functions from Military Services to Defense Logistics Agency* | 2008 |
| NPS | *Managing the Service Supply Chain in the Department of Defense: Implications for the Program Management Infrastructure* | 2007 |
| GAO | *Defense Acquisitions: Improved Management and Oversight Needed to Better Control DoD's Acquisition of Services* | 2007 |
| GAO | *Defense Acquisitions: Tailored Approach Needed to Improve Service Acquisition Outcomes* | 2007 |
| GAO | *Defense Budget: Trends in Operation and Maintenance Costs and Support Service Contracting* | 2007 |
| NPS | *Managing the Service Supply Chain in the Department of Defense: Opportunities and challenges* | 2006 |
| AF | *Performance-based Services Acquisitions* | 2005 |
| GAO | *Contract Management: Opportunities to Improve Surveillance on Department of Defense Service Contracts* | 2005 |
| DoD | *Defense Science Board Task Force: Management Oversight in Acquisition Organizations* | 2005 |
| GAO | *Contract Management: Guidance Needed for Using Performance-based Service Contracting* | 2002 |
| DoD | *Guidebook for Performance-based Services Acquisition in the Department of Defense* | 2001 |
| NOTE: the researchers reviewed acquisition and contract management policy letters located at http://www.whitehouse.gov/omb/procurement/ | | |

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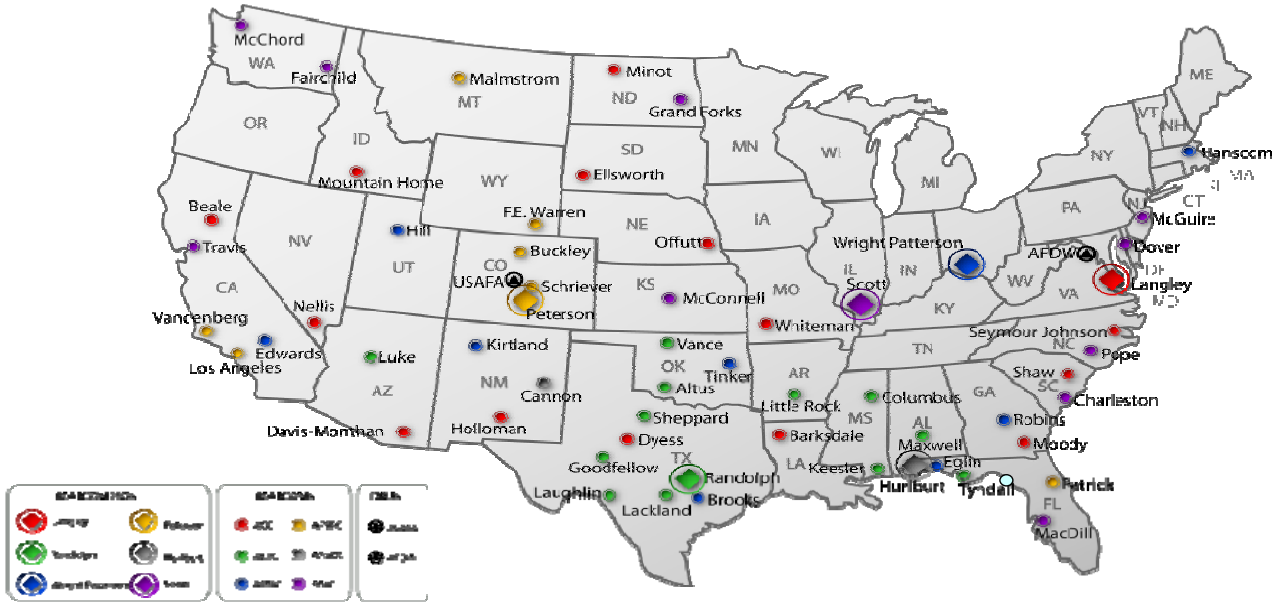
## APPENDIX B. LOCATIONS OF CONUS U.S. AIR FORCE BASES




**(**Source: From AF Contracting Website**).**

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# APPENDIX C. OVERVIEW OF ANNUAL EXPENDITURES FOR THE USAF

| Product/Service Classification (PSC) Code | Service Category Description | FY03* | FY04* | FY05* | FY06* | FY07* |
|---|---|---|---|---|---|---|
| A | Research and Development | $9.436 | $10.184 | $10.838 | $10.614 | $12.343 |
| B | Special Studies and Analyses - Not R&D | 0.584 | 0.487 | 0.433 | 0.360 | 0.270 |
| C | Architect and Engineering Services - Construction | 0.703 | 1.494 | 1.045 | 0.543 | 0.723 |
| D | Automatic Data Processing and Telecommunication Services | 1.421 | 1.773 | 1.535 | 1.601 | 1.491 |
| E | Purchase of Structures and Facilities | 0.0180 | 0.0110 | 0.0070 | 0.0004 | 0.0001 |
| F | Natural Resources Management | 0.065 | 0.046 | 0.022 | 0.113 | 0.125 |
| G | Social Services | 0.015 | 0.016 | 0.030 | 0.021 | 0.026 |
| H | Quality Control, Testing and Inspection Services | 1.799 | 0.040 | 0.091 | 0.081 | 0.088 |
| J | Maintenance, Repair, and Rebuilding of Equipment | 2.382 | 2.582 | 3.340 | 4.483 | 4.768 |
| K | Modification of Equipment | 0.451 | 0.357 | 0.407 | 0.310 | 0.292 |
| L | Technical Representative Services | 0.932 | 0.867 | 0.905 | 1.070 | 1.961 |
| M | Operation of Government-Owned Facility | 0.693 | 0.794 | 0.760 | 0.830 | 0.860 |
| N | Installation Equipment | 0.028 | 0.016 | 0.131 | 0.091 | 0.105 |
| P | Salvage Services | 0.190 | 0.014 | 0.015 | 0.023 | 0.022 |
| Q | Medical Services | 0.035 | 0.049 | 0.109 | 0.190 | 0.294 |
| R | Professional, Administrative and Management Support Services | 4.178 | 4.013 | 5.680 | 6.724 | 7.313 |
| S | Utilities and Housekeeping Services | 1.508 | 1.354 | 1.375 | 1.428 | 1.496 |
| T | Photographic, Mapping, Printing, and Publication Services | 0.045 | 0.035 | 0.038 | 0.049 | 0.049 |
| U | Education and Training Services | 0.328 | 0.279 | 0.331 | 0.194 | 0.233 |
| V | Transportation, Travel and Relocation Services | 2.614 | 2.235 | 2.884 | 2.927 | 2.945 |
| W | Lease or Rental of Equipment | 0.054 | 0.031 | 0.033 | 0.041 | 0.034 |
| X | Lease or Rental of Facilities | 0.118 | 0.177 | 0.085 | 0.081 | 0.096 |
| Y | Construction of Structures and Facilities | 0.395 | 0.442 | 0.603 | 0.912 | 0.730 |
| Z | Maintenance, Repair or Alteration of Real Property | 2.122 | 1.582 | 2.276 | 2.785 | 2.823 |
| | **Totals:** | **$30** | **$29** | **$33** | **$35.5** | **$39.1** |
| *NOTE: Amounts in Billions | | | | | | |

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